Issue 209
PS
1970 Series
April
THE PREVENTIVE MAINTENANCE MONTHLY
Will Eisner
HERE'S MY ESC, SARGE!! I'M GREEN TO GO!
GENERAL WESTMORELAND
Page 1

UNITED STATES ARMY
THE CHIEF OF STAFF

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Every soldier is a manager of equipment—not only of his personal gear but of his unit's equipment. The enlisted crew of a million-dollar helicopter or a quarter-of-a-million-dollar tank are the "firstline" managers of these expensive items. And this is equally true of an artillery section chief or a jeep driver.

Know your equipment—learn what it can and cannot do. Know how to keep it combat ready—and learn where to go when you need help. Wherever you are, the Army maintenance and supply system will respond to your needs. Make it work for you.

Your equipment is essential to mission accomplishment. Learn to take care of it.

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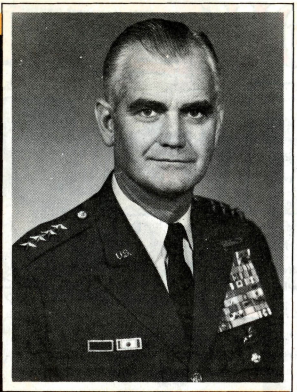

A MESSAGE FROM THE CHIEF OF STAFF

★★★★

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IN THIS ISSUE

GENERAL

TM 38-750	4-11	D7E Lube	62
290M Tractor	56-59	DA 3318	63
Radioactive Sample	59	Generator TM	63
50MM Dispenser	60	SB 700-20	64
Redmanson, RGD-9000	61	CBR Mask	64
M532 Laundry Unit	61	New Publications	28
Piton Snaplink	62	Supply	19, 22, 25, 27, 42, 43, 47, 50
"T" Items	62		

COMMUNICATION 12-19

Pipsy-5	12-14	ARC-54	17, 18
AN/VRC-12	15	AN/ARC-51X	18
CX-4722/U	16	Connector Caps	19
TD-352/U	16		

AIR MOBILITY 19-27

CH-47	19	HueyCobra	20-27
OH-6A	19	Steam Cleaning	27

GROUND MOBILITY 37-48

5-Ton Truck	37, 43, 45	Drag Link Care	44
Spark Plugs	38-42	M151 ¼-Ton	47, 48
2½-Ton Truck	44, 46	60-AMP Alternator	48

FIREPOWER 49-55

M16A1	49-50	M108/M109	52-53
M85 MG	51	155 MM Howitzer	54-55

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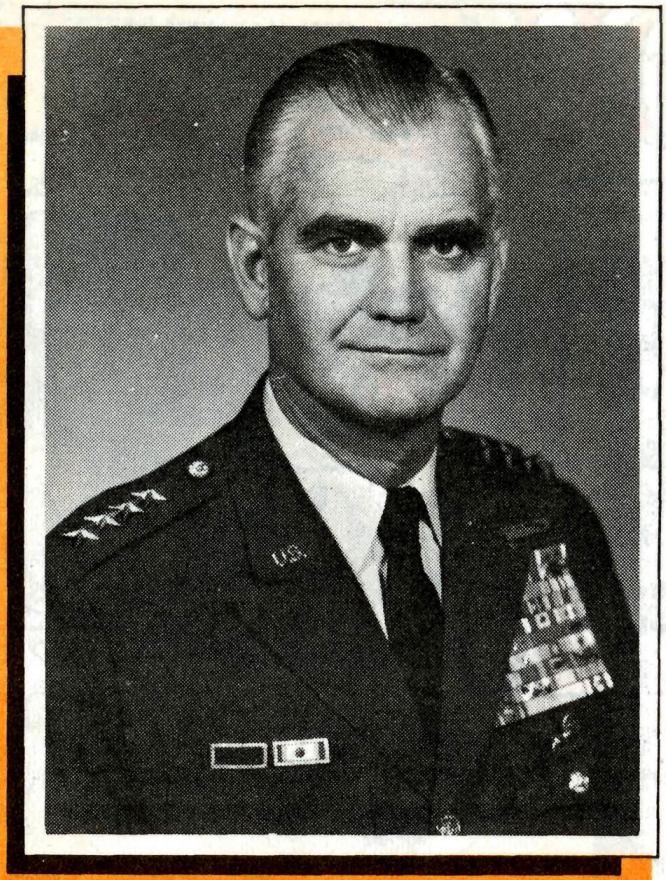

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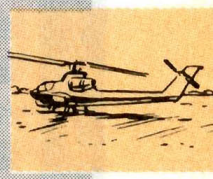

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lo–gis–tics \ (from Greek *logistike* – art of calculating) n: the procurement, maintenance and transportation of military equipment and supplies.

A guy like you in a fighting outfit seldom has to worry about a big word like "logistics." There are several thousand military and civilian specialists spread from here to yon who do the logistics worrying for you.

But, sometimes it's a good idea for you to get a little whiff of big things when they happen in the Army's logistics business. Now is one of those times.

Top-level logistics "wheels" have been working on the supply-maintenance business recently, and they have come up with some big changes in the way things are managed. You may never hear about all of these because they are being made mainly in higher-level supply commands. The changes are aimed at giving you – the fighting man – the equipment, repair parts and supplies you need – when you need them.

Take DA Circular 700-18 (Nov 69), for example. It gives the word on what supply outfits, from Washington all the way out to your own DS unit, will do to make sure the items you need are supplied to you as fast as possible, and with the least cost to Uncle Sam.

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WORK
TAMMS
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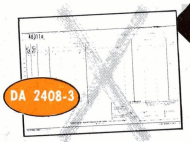
TM 38-750
DEPARTMENT OF THE ARMY TECHNICAL MANUAL
THE ARMY MAINTENANCE MANAGEMENT SYSTEM (TAMMS)
HEADQUARTERS DEPARTMENT OF THE ARMY

TM 38-750 TUNE-UP AND...

WORK LOAD REDUCER



THIS ONE'S DROPPED

DA 2408-3

Its name's changed — from TAERS to TAMMS.

It's finer-tuned in records-keeping rules; it drops reporting on some equipment items altogether; and it makes some needed revisions in forms.

Best of all, it cuts down the equipment user's reporting workload.

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DA 2410-1

DA 2416

DA LABEL 80

OVERALL WRAP-UP

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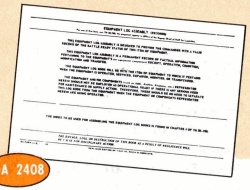
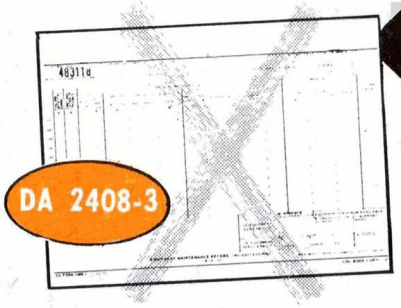
Five forms are revised and streamlined to do a better job. They are DA 2408 (log assembly), DA 2410-1 (aircraft component movement and condition), DA 2416 (calibration data), DA 2417 (unserviceable or limited use tag for calibrated items) and DA Label 80 (calibration tag). All these revised forms have new dates.



DA 2408

LOAD REDUCER



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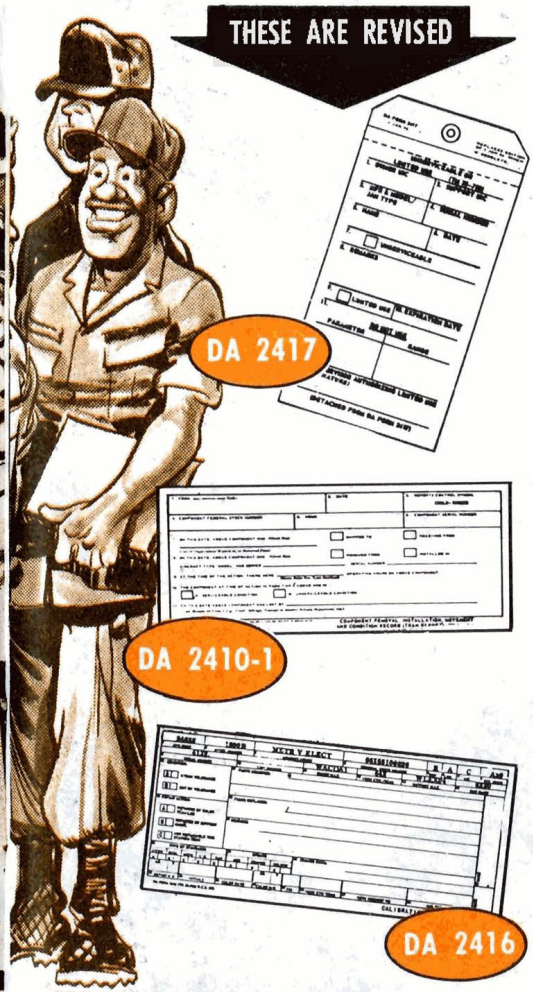

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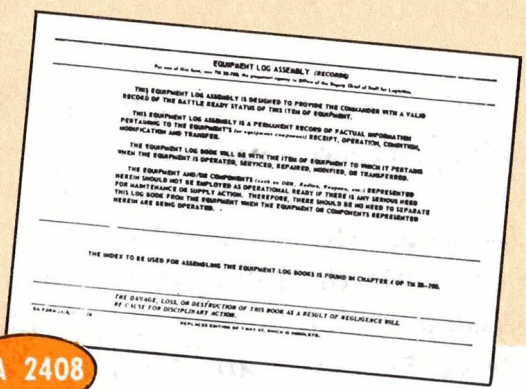

EQUIPMENT LOG ASSEMBLY (RECORD)

DA 2408

P.S. MORE

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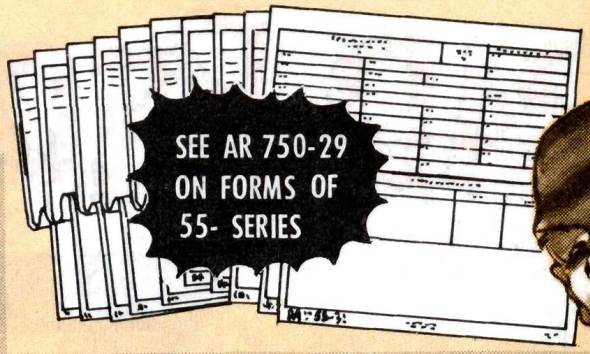

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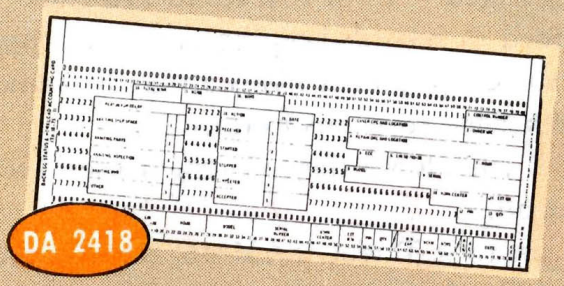

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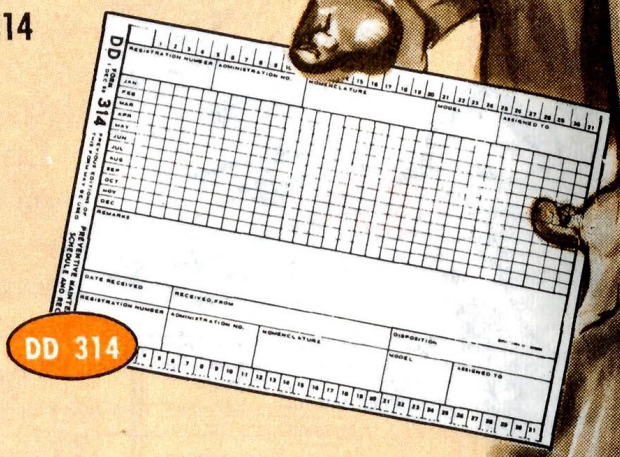
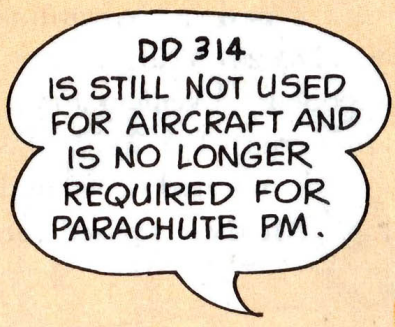
DD Form 314 becomes a mini-workhorse form in TAMMS. Besides the PM schedule for equipment, you'll carry there the equipment's organizational and support record of NORS/NORM time, including that for commercial vehicles.





The accumulative DA 2406 materiel readiness report dates are alined with dates for unit readiness reports (AR 220-1 and AR 135-8). Dates are the 20th of March, June, September and December. (Note also interim monthly interval for items marked by asterisk in the TM's Appendix "C").

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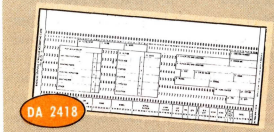

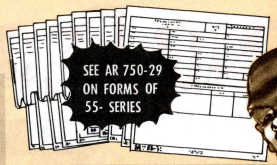

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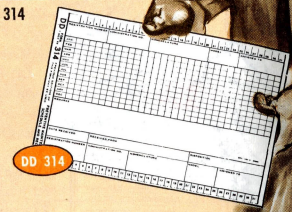

DD 314
IS STILL NOT USED FOR AIRCRAFT AND IS NO LONGER REQUIRED FOR PARACHUTE PM.

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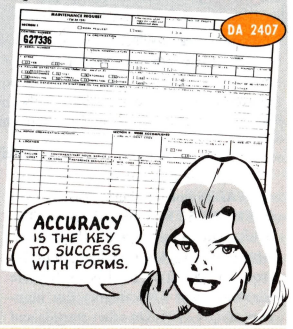
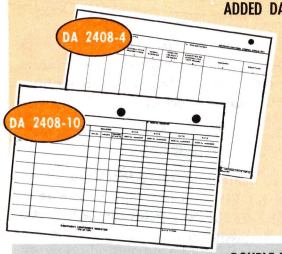


ADDED DATA FOR GUNS



DA Form 2408-4 gets additional data on weapon identity, breech rings and retubings needed to comply with TM 9-1000-202-35 and TB 750-231.

For the same purpose, recording of gun and howitzer tubes and breech mechanisms plus changes of these components, with equivalent full charge (EFC) rounds data, is required on DA 2408-10.

DOUBLE-DUTY FORM

Top job for DA Form 2408-7 still is reporting equipment transfers, gains and losses, but it'll also be used to report usage data (hours, miles and rounds) for tanks and combat and tactical vehicles as designated in the TM's Appendix C. These reports are made quarterly (1 Feb, 1 May, 1 Aug and 1 Nov) for tanks and combat vehicles; and semiannually (1 May and 1 Nov) for tactical vehicles.

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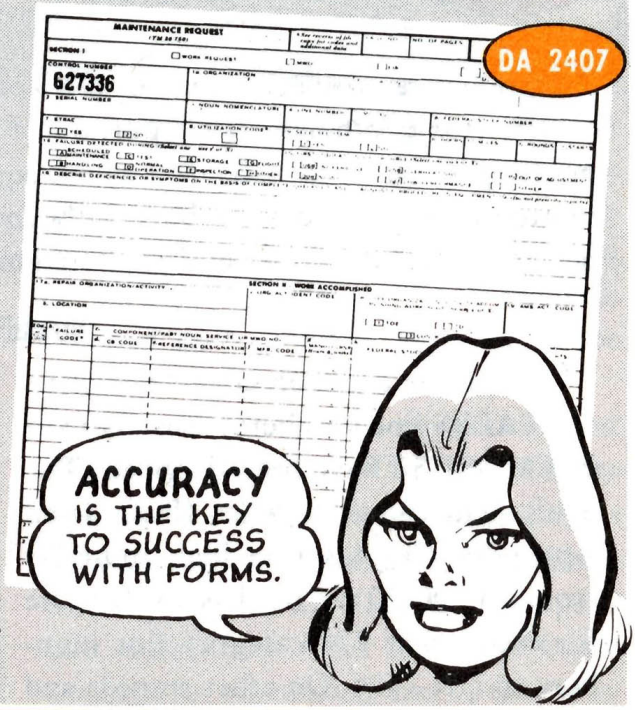

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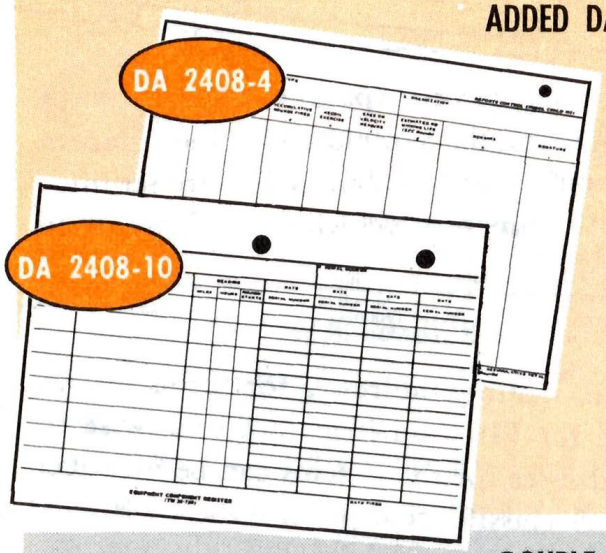

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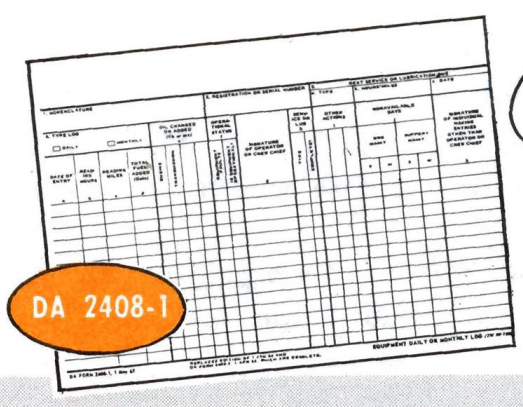
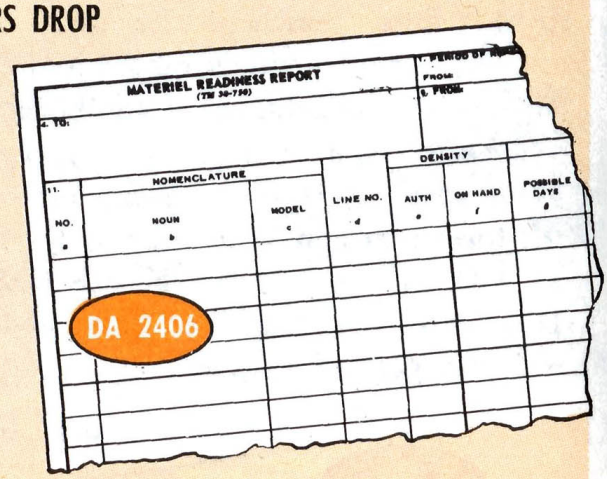


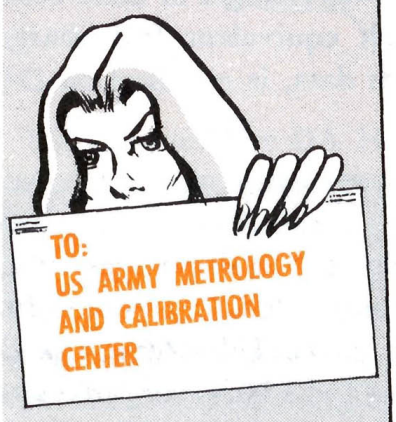
Options are provided on use of DA Form 2408-1 at service schools and training centers (for equipment not reportable on DA 2406) and at administrative motor pools operated under AR 58-1 where equipment is dispatched by DA 2400. At motor pools this applies to both daily and monthly DA 2408-1, if another means is used to record info normally entered on the monthly.

NUMBERS DROP



Except for commercial vehicles, the old TAERS line numbers formerly used in TM 38-750 have been dropped. The equipment category codes (ECC, from Appendix C) plus line item numbers from SB 700-20 are used as a substitute for the former TM category line numbers on DA 2406. On other records and reports, line number blocks may be left blank (it's optional with your CO).

The listing of equipment which requires log records (para 4-21) is set up by ECC, except for commercial vehicles, which retain the 340000-series line numbers. Appendixes B, C, D and E—on forms required to be submitted—are set up in ECC sequence (again with the exception of commercial vehicles, which are in the 6-digit line number sequence).



DEPARTMENT OF THE ARMY
OFFICIAL BUSINESS

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY

MAILING GUIDE

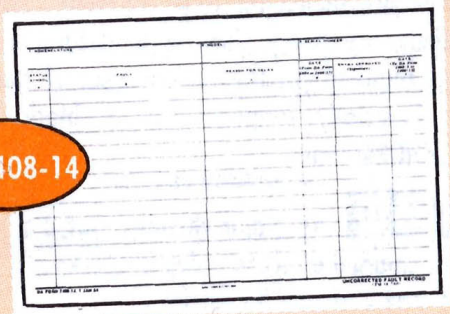
Appendix B, mailing addresses for forms, has an added section for EIR's on items not otherwise reportable. Addresses for these items can be identified by Federal stock classification (FSC)—the 4 left-hand digits of the item's FSN.

All calibration data goes direct to US Army Metrology and Calibration Center.

The requirement for log records and data collection on medical equipment is eliminated—except for MWO records and reports.

Equipment failure codes, parts source codes (Appendix A), and calibration codes (Chap 6) are reduced. In Appendix A, equipment category codes (ECC) are added as Table 20.

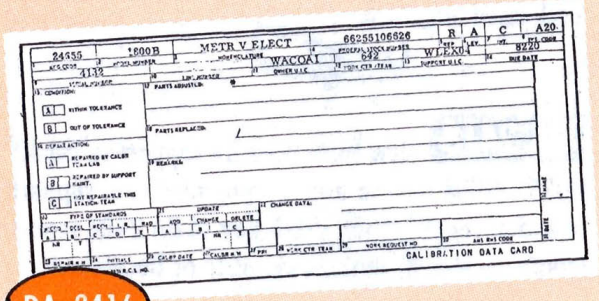
-14 GUIDELINES



DA 2408-14

In addition to guidelines for aircraft entries, para 4-13 limits entry of faults on DA 2408-14 for other equipment to those with a circled (X) status symbol or one that's less serious. (Only red dash and red slash symbols for aircraft are allowed on this form.)

Units with tools and equipment that require calibration (TB 750-236) are required to submit initial DA 2416's (Master Record Card) to their calibration support for all items that get periodic calibration. After that these forms are kept for scheduling and updating by the calibration support unit, if automatic data service is available. (If manual processing is necessary, the schedule may be on DA 2416 or DD 314.)



DA 2416

CALIBRATION RECEIPT

After initial submission of DA 2416, the user may need DA 2416 as a receipt for an item turned in for calibration. But DA 2402 may be used as a receipt—instead of 2416.

In addition, using units are required to submit DA Form 2416's to a new calibration support unit upon relocation or inactivation, or when new items that require calibration are received or those on hand are turned in.

DA Form 2407 is still required for calibrated tools and equipment—but only to request maintenance repair actions and submit EIR's—not to request calibration.

CHECK CHANGES

Cast a sharp eye on those equipment lists in para 4-21 and the appendixes. There're scads of deletions and some new items added.

P.S MORE

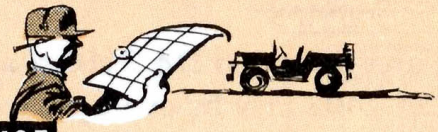
FORM

DA 2400 and DA 2401 No major changes.

DA 2402 Requirement for use to identify warranty claim exhibits is added, with entry of W in block 6, and the serial number of the end item from which the item was removed in block 27. Note, also, use on equipment to be calibrated.

DD 314 In addition to new use listed previously, equipment ESC rating is to be listed under remarks for items reportable on DA 2406, with other optional entries permitted on PM services. For items reported on DA 2406, put the equipment ECC plus its LIN in the nomenclature block which helps in making out DA Form 2406. When equipment's transferred, its DD 314 goes along.

DA 2404 In addition to a reduction of transcribed actions, there are changes in rules on ESC and CMMI use. If support action is necessary to correct a fault, indicate this by entry of "DA Form 2407 (Spt)."



DA 2405 Data reduction print-outs may be substituted for this form where ADPE capabilities exist.

DA 2406 Principal changes are in reportable items, ECC plus LIN use (instead of TAERS line number), submission dates and source of NORS/NORM time (from DA 2407 and DA 2418 to DD 314, then to this form). Separate reports are required for each utilization code that applies to equipment in the reporting unit.

DA 2407 Only major changes are the requirement to use this form for organizational maintenance reporting and addition of detailed rules on use for warranty claims. Submit monthly for aircraft and selected missile items; after each reportable maintenance action for other selected equipment. But there are many changes in details on block entries required for the various uses of the form. Note: Especially support's use of block 35 for NORS/NORM time.

DA 2410 No major changes, but if a component is shipped direct to a depot, blocks 26, 27 and 28 of copy 2 require no entries.

DA 2410-1 Revised aircraft form. It's a preaddressed postcard.

DA 2418 New form used by support to report NORS/NORM time to user if equipment is in support at end of report period (20th day of DA 2406 report month — March, June, September or December).

DA 2408 Fault symbols are-listed in descending order of seriousness: X — most serious, circled X — second, dash — third, and diagonal slash — fourth.

DA 2408-1 Major change is removal of **requirement** for entry of NORS/NORM time in column j. Use of this column is a local option. Also, note options spelled out for specific types of units.

DA 2408-4 Marginal entry required at top, showing: End item on which the weapon is installed, its model and serial number plus the breech ring and number of retubings. Also, each **new** DA 2408-4 must have date of last firing or recoil exercise verified by the CO. Gage entries must be made by support, but may be carried forward by operator or crew.

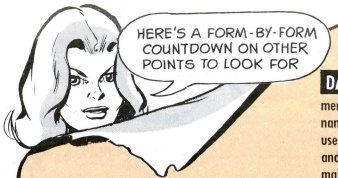


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CHART

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DA 2408-7 Principal change is addition of requirement for usage report (para 4-8.1) on this form for designated equipment. For transfer use, block 6 is left blank except for commercial vehicles. For these vehicles block 8 gets the ACVC (from SB 700-20) or, if none, use ECC. For all equipment, blocks 9 and 17 are left blank. Use code W in block.10 for commercial design vehicles authorized for tactical use by TOE or MTOE.

DA 2408-8 Changes include use of carriage numbers for towed weapons in block 4, commercial vehicle ACVC or ECC in that order of priority in block 9, and FSN redesignation entry in block 17 when this occurs.

DA 2408-10 Requirement for entry of gun and howitzer tubes and breech mechanisms, with EFC rounds when changed, is added.

DA 2408-12 No major change.

DA 2408-13 Provides that status symbols in block 16 (as well as block 7) will not be erased or changed even if made in error. Such status changes will be explained in the next open status line on the form.

DA 2408-14 Rules added are guidelines on faults to be transcribed to this form for equipment other than aircraft.

DA 2408-15, DA 2408-16, DA 2408-17, DA 2408-18 and DA 2408-19

No major changes on these aircraft and aircraft component forms.

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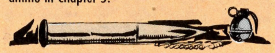

DA 2415 No major change.

DA 2416, DA 2417 and DA Label 80 Forms redesigned with new rules to match.

Para 4-20 provides revised rules on disposition of records upon disposition of the equipment. Para 4-21j authorizes disposal of any records no longer required for specific items. They're to be kept or dropped at the CO's option. None are to be forwarded unless a commodity command asks for 'em.

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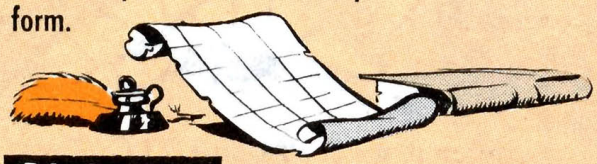

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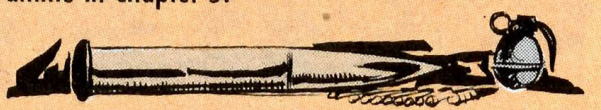

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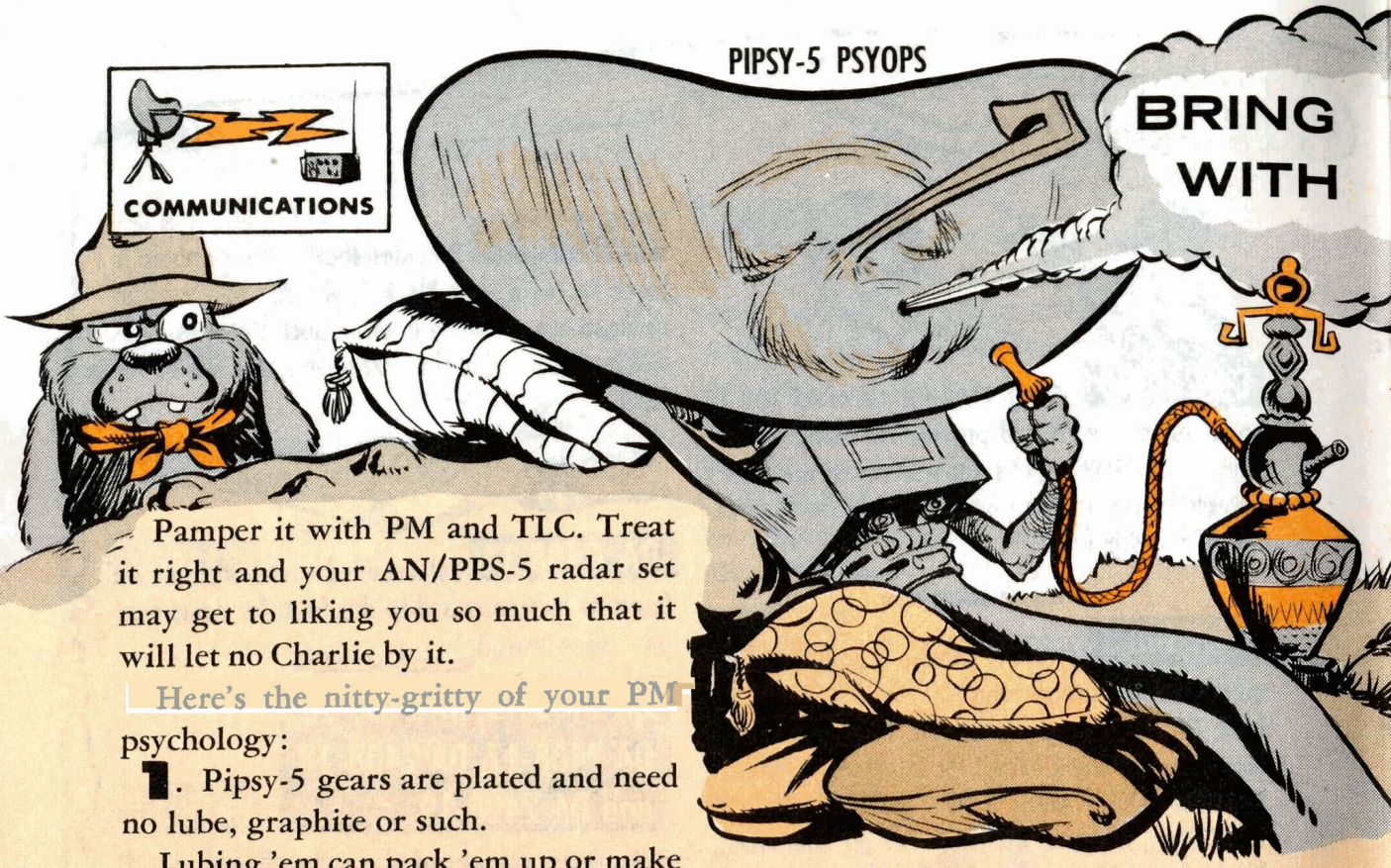
PIPSY-5 PSYOPS

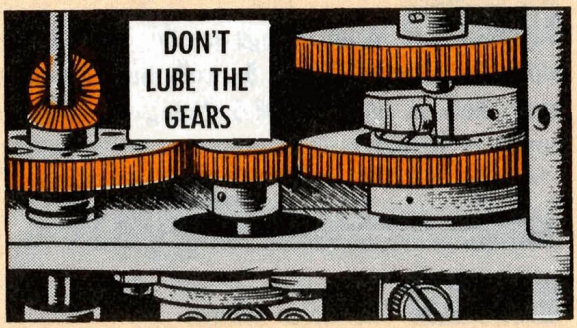


Pamper it with PM and TLC. Treat it right and your AN/PPS-5 radar set may get to liking you so much that it will let no Charlie by it.

Here's the nitty-gritty of your PM psychology:

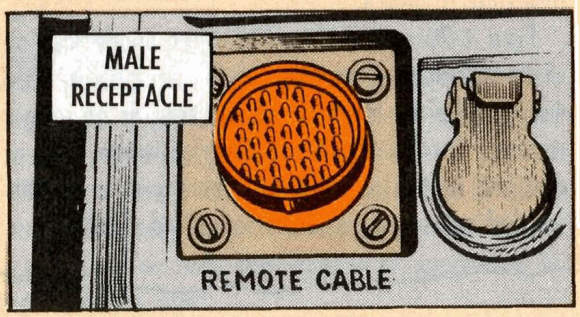
1. Pipsy-5 gears are plated and need no lube, graphite or such.

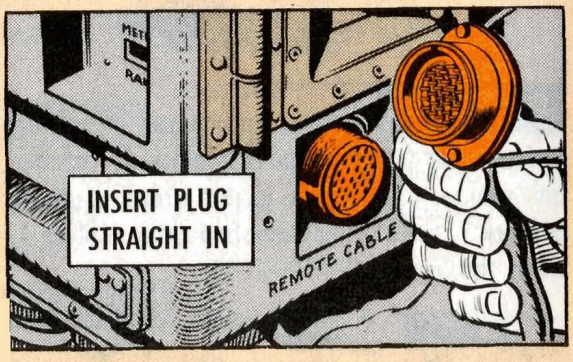
Lubing 'em can pack 'em up or make the kind of mess that can send your set all the way back to depot for repair.



2. Caution is the word if your set still has the CX-8666/PPS-5 remote cable.

The male plug on the CX-8666 will mate with the male receptacle on the C-4610 control indicator if you accidentally reverse the cable ends. Then, when you push the cable connector into place, the pins in the plug and receptacle can be bent or broken.





So, look before you connect. The male end of the connector goes to the remote cable receptacle on the RT-692 receiver-transmitter.

You don't have the problem with the replacement, the CX-12004. With each cable, though, you gotta remember to insert the male plug straight in. No bending or wiggling . . . otherwise, bent pins.

BRING SMOKE TO CHARLIE WITH YOUR RADAR PARDNER

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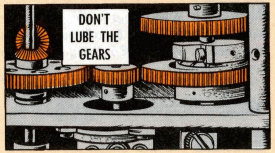

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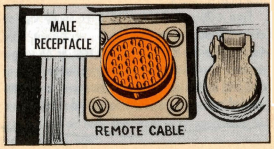

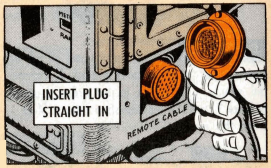

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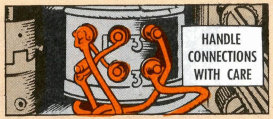
3. If you can't quite make your azimuth checks per paras 2-56 and 2-57 of Ch 2 to TM 11-5840-298-12, forget about bringing in the R1703 azimuth sweep potentiometer ("pot") by adjusting it with a pair of needlenose.

You'd be reaching toward a repair job.

And, using an ohmmeter on the R1703 pot can damage the pot. Checking it out is a job for your support . . . which does it with a resistance bridge.

Besides, in addition to burning out the potentiometer, chances are great that you'll also damage the ohmmeter.

Careful around those connections to the pot, too. They're easy to break or otherwise damage.

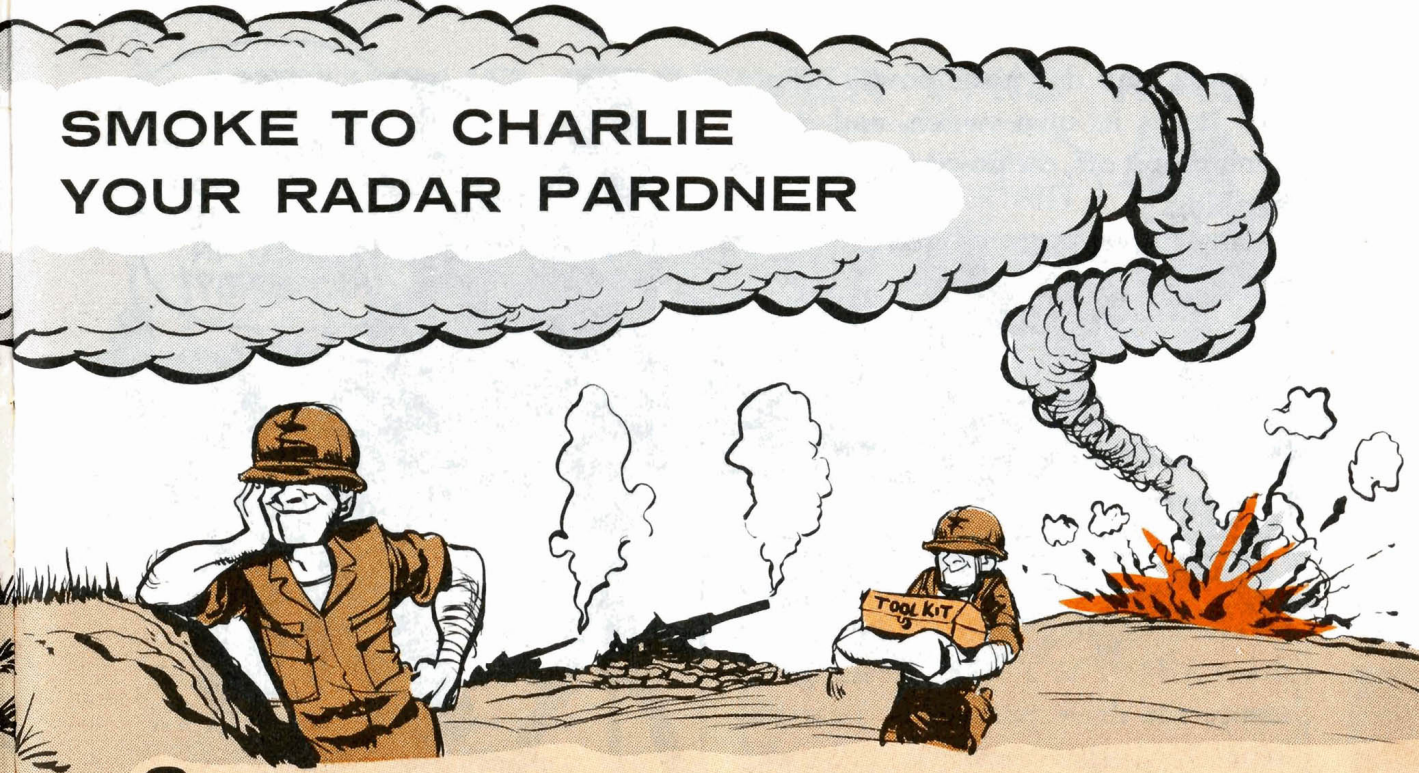


4. The early model, hang-on type power supply (PP-4450) runs hot after long use. It should be shut down occasionally (if possible) to allow it to cool.

Also, when you shut down the set, be

PS MORE

SMOKE TO CHARLIE
YOUR RADAR PARDNER



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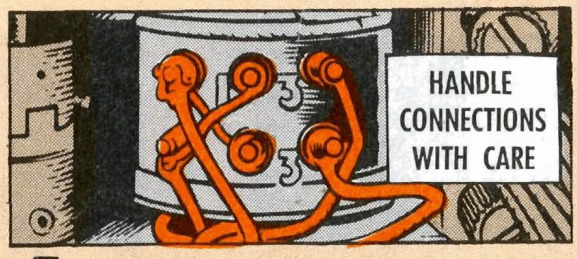

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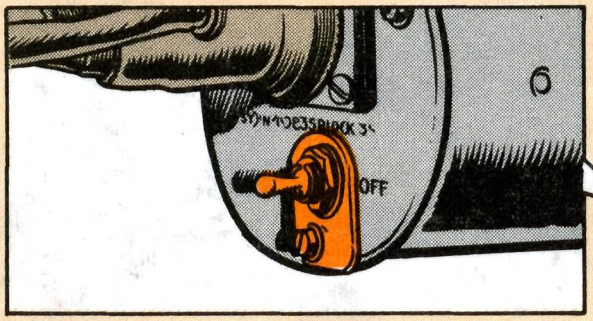
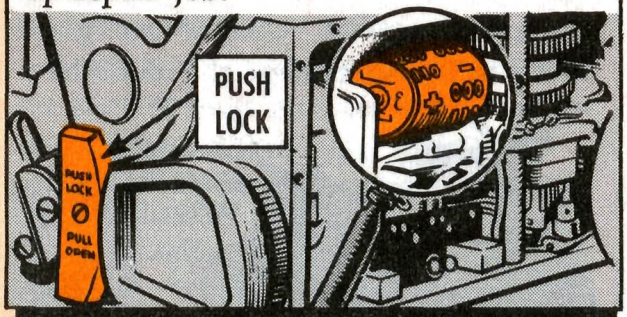
P.S MORE

sure you shut down the power supply, too. It has its own switch, and if you don't shut it off, the power supply keeps working.

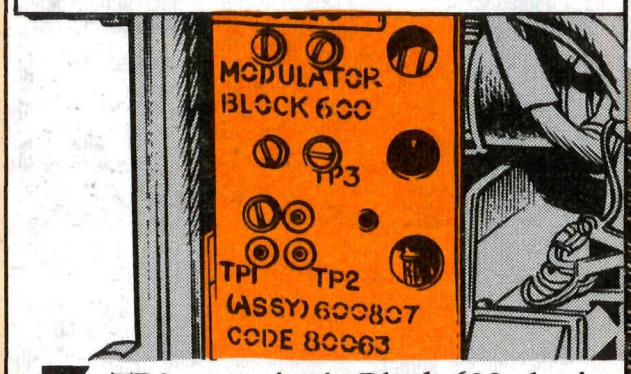


5 When you're through using the set after elevating it, return the antenna drive AB-992 to a "000" reading and secure the drive push lock. That prevents shearing the gear pins . . . a way-up repair job.



Coupla' cautions should you be working on the RT with the cover off:

6. Watch that C609 capacitor in Block 600. The voltage doesn't bleed off. Touch it, and you get burnt with 600 Volts.

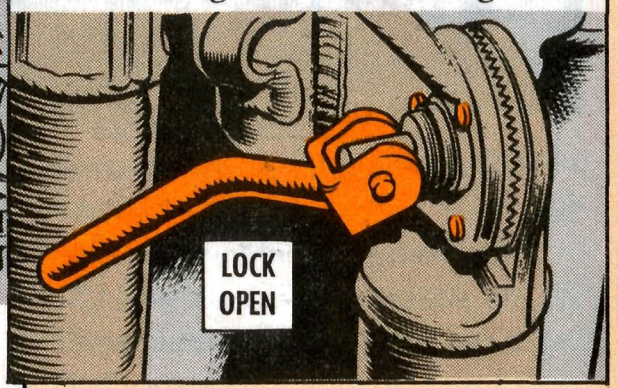


7. TP2 test point in Block 600 also is a hot one. Keep your finger away.

8. Those threads on the cavity power and tuning adjust knobs tighten up after they're used awhile . . . but keep the vice grips and pliers away.

A light dab on the threads with silicone compound FSN 6850-880-7616 will let the knobs move free again.

9. Finally, release the lock of the tripod legs before attempting to change leg positions. Remembering that prevents shearing off the 3 retaining rivets.

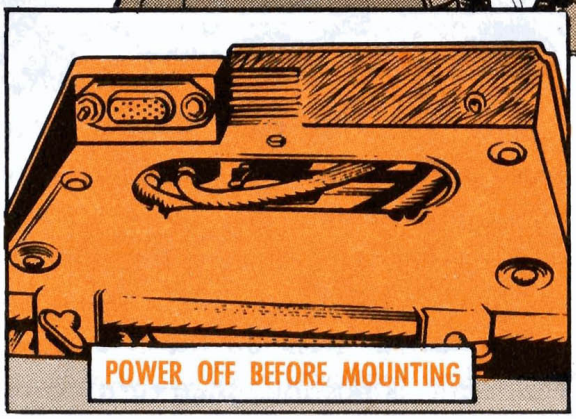


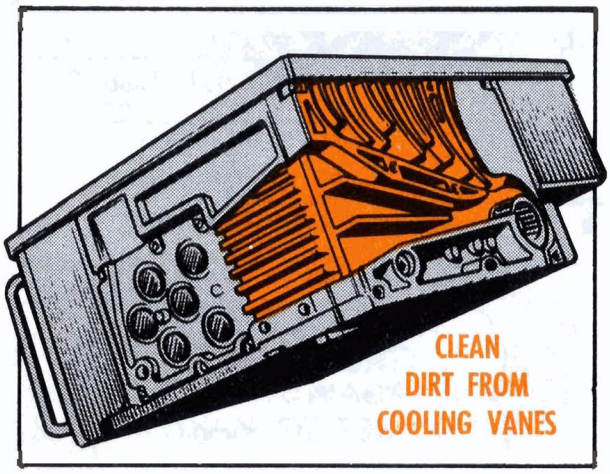
AIM YOUR RECEIVER THIS WAY

Can you think of anything sadder'n not getting the word on your AN/VRC-12 series horn that your unit's been made a candidate for the Freedom Bird?

It can happen . . . if you forget the following skinny on the RT-246 and RT-524 receiver-transmitters:

Be sure power is off when you put the RT in its mount. Otherwise, you burn the mount pins so badly that sometimes you got a GS-level repair job.





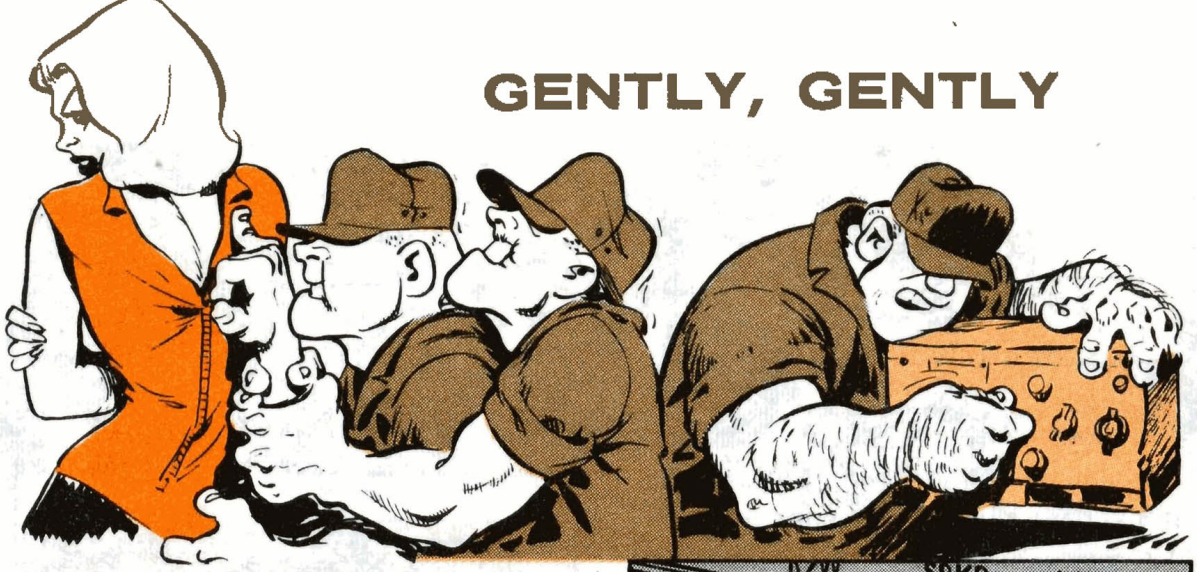
You organizational mechanics should take off the side panels regularly (like once a week or so in the dusty or muddy season) and clean dust and mud from the transistor bank and cooling vanes. A clue that a cleaning may be long overdue: The blower motor keeps running even though you're not keying the set (using the transmitter). The motor keeps running when the set's overheated.

Dust and mud in the cooling vanes can overheat the set.

Unit radio repairmen gotta keep the module board pins safety-wired. Otherwise, the pins work loose, short out the set, fall in the gear train, etc.

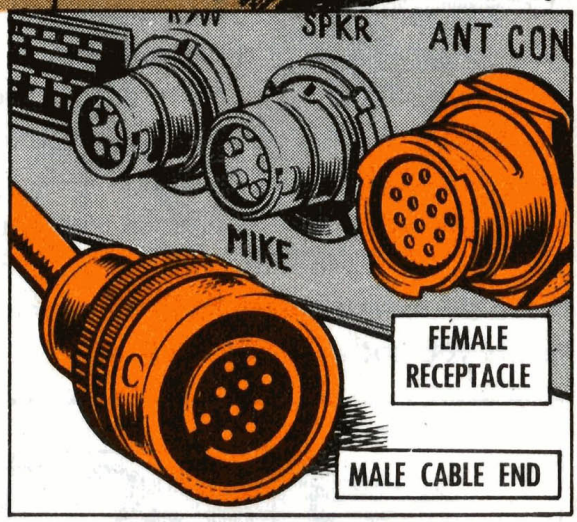
It's an old, old story, but if you wanna get the word on The Bird, or direct artillery fire, or get outta wherever you gotta get outta, connect and disconnect your antenna cable with care. Be sure the guide key is in the keyway before you twist it in place. Otherwise, you break the amphenol connector . . . and you may not know it until it's time to spread the word. And then you won't know it.

GENTLY, GENTLY



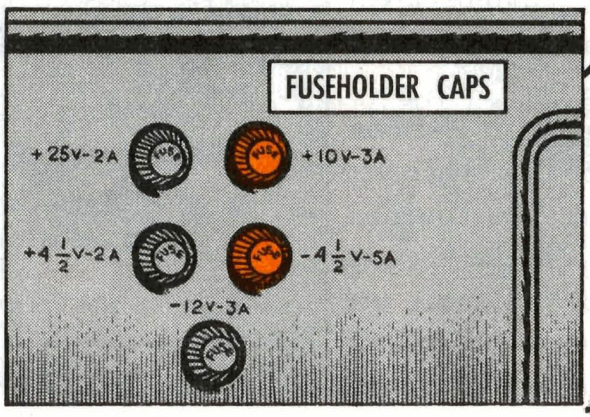
Easy with that RT-524 or RT-246 front-panel connector to the AS-1729 or AT-912 antenna. No hard twistin' when you install or remove the antenna.

Position the CX-4722/U cable assembly as far back on the R-T panel connector as possible, then turn gently to line up the CX-4722 grooves with the marker on the front-panel connector. That way, you'll not pull the tops off the connector pins.

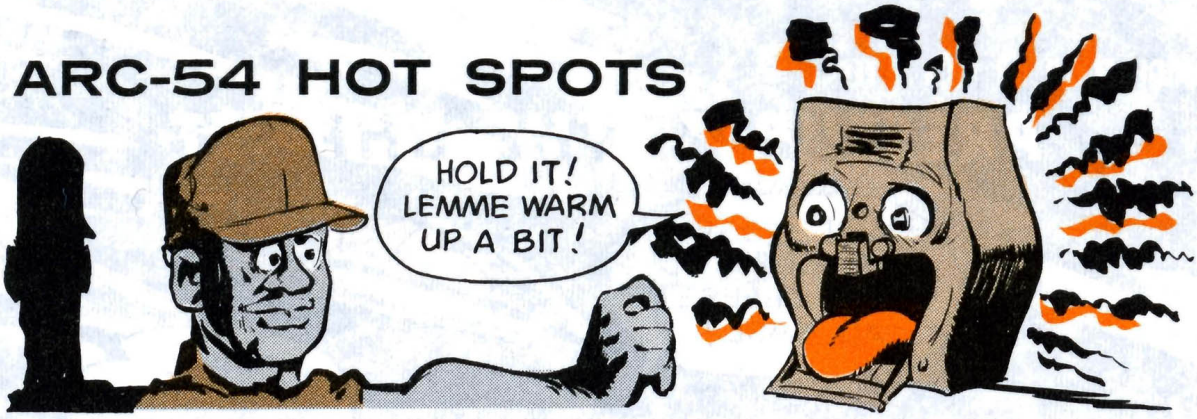


TIGHTEN WITH CAUTION

Y'don't have to tighten those 10-volt F-1 and 4-1/2-volt F-2 fuseholder caps as hard as all that, man. Save a little muscle and cut down sleeve breakage on the fuseholders of the TD-352/U multiplexer.

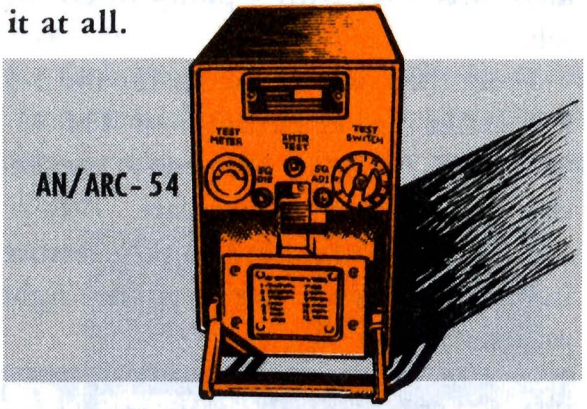


ARC-54 HOT SPOTS



Beat the heat and watch the beat with your AN/ARC-54 radio set yet.

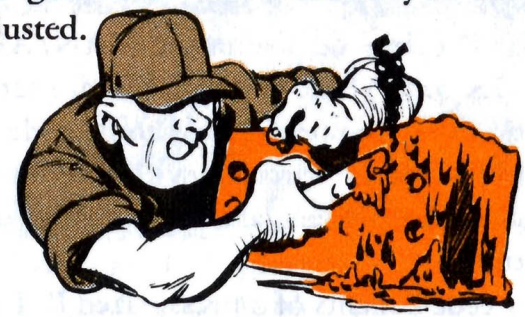
Too much heat and too much beat (from vibration) can put your set down, but then again too little heat won't help it at all.



F'rinstance, when you turn on the set, let it warm up for at least 3 minutes before you transmit. If you throw the power to it with no warm-up, you can zap the PA tube and the modules.

On the other foot, don't over-transmit, or you can get the set too hot. Cut the keying to a minimum, and hold the long talk for ground conversation. Too much heat can throw the set out of adjustment.

As for beat, tuning slugs in the RF amplifier shake loose from vibration (especially in Hueys) . . . which means you gotta seal 'em while they're still adjusted.



If you can't get standard sealer (like glyptal or loctite) a dab of that snow-white typewriter correction fluid or candle wax can do the job.

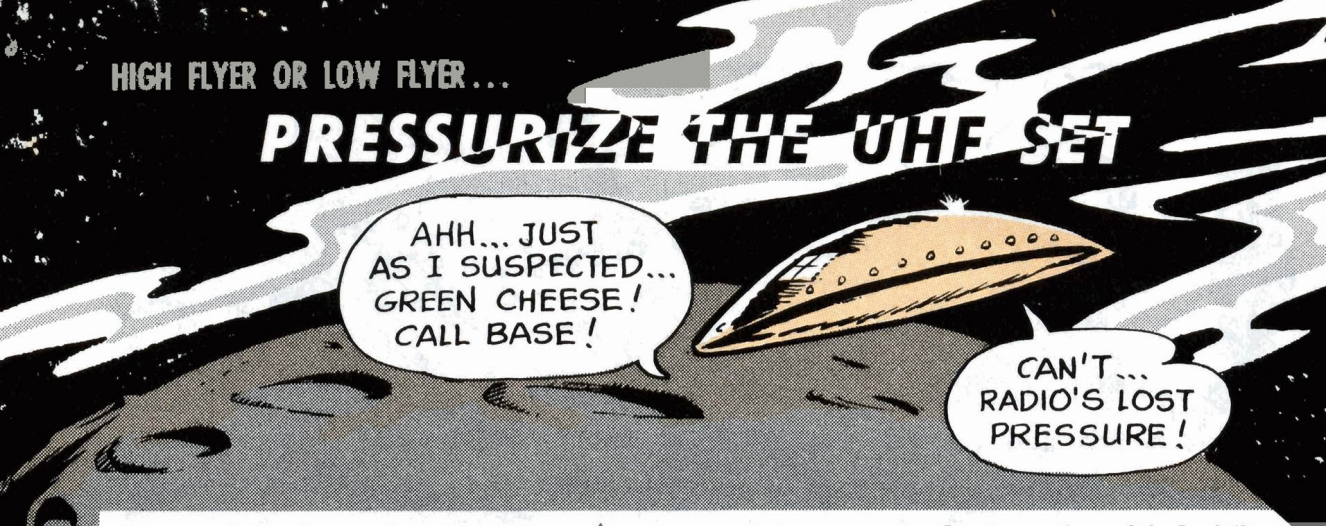
Some reminders: When you wash the aircraft, remove the radios . . . if possible. Water blows power supplies. If you can't take 'em out, be careful with the juice like cover 'em up.

Be sure the power source is disconnected before you remove or install the set. Saves all kinds of damages . . . to mounts, connectors, components and so forth.

When replacing screws, especially in components like the RF amplifier, be sure they're the right size. If they're too long they can damage parts, short out tuning plates and cause 67 kinds of headaches.

HIGH FLYER OR LOW FLYER...

PRESSURIZE THE UHF SET



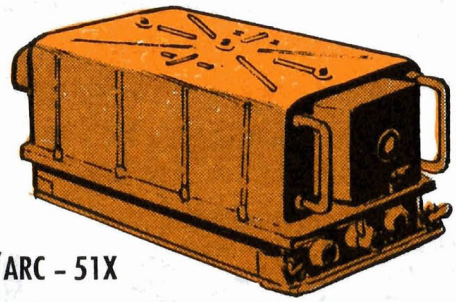
The big deal about the AN/ARC-51X and 51BX command radio sets is that they are pressurized to provide the high-voltage circuits with an atmosphere to prevent arc-over at high altitudes.

Side benefits of a pressurized R-T are — low moisture, no dust, and lower operating temperatures. The modules are cooler and will last longer.

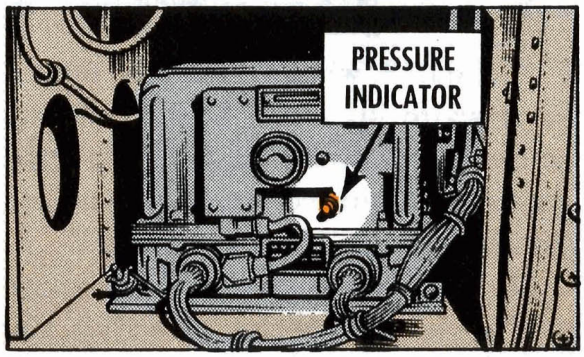
Ask your DS unit to pressurize the set in your hedgehopping bird. They have maintenance kit, electronic equipment MK-731, with a pump to do the job.

From then on, eye the set for the 3-5 PSI called for in para 3-5 of TM 11-5820-518-20 (May 68) every preventive maintenance intermediate.

When the center head on the pressure indicator sticks out you've got the right pressure.



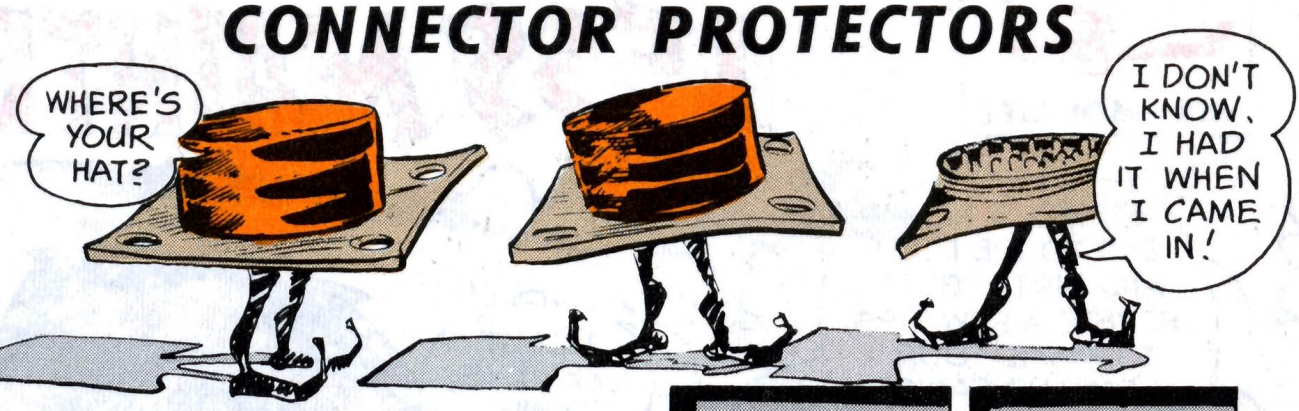
AN/ARC - 51X



STOPS ANTENNA SLICING

To keep the ARC-54 antenna on your B model UH-1 from ending up like a piece of bologna, schedule Ch 1 (31 Oct 69) to MWO 55-1500-200-20/6 for your bird. It puts a wedge spacer between the antenna base and tail fin to tilt the antenna away from the blade. Other Huey models already have the spacer.

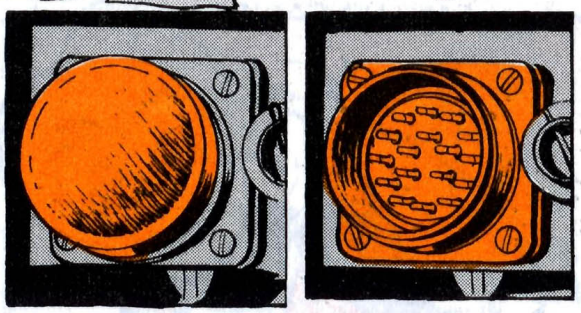
CONNECTOR PROTECTORS



Bare connector pins on course and attitude indicators, gyroscopes and the like deserve a happy hat so they can stay straight till a cable connector goes back over 'em.

To keep pins on your avionics items from being bent you can get the following protective caps for the equipment listed:

CAP FSN	EQUIPMENT
5935-811-9131	ID-48
5935-280-2309	ID-250
5935-642-4271	ID-718
5935-642-4271	ID-637
5935-811-9131	C-4073
5935-257-7623	SBU-6
5935-626-3700	AM-1514
5935-500-8649	EC-20



You can find protective covers of varying sizes in Table No. 5670, on pages 838, 839 and 840 of DoD Catalog C5935-IL-A Vol 3 (1 Mar 70). The diameter given is inside diameter, which should be just a hair tighter than the diameter of the connector in order to insure a snug fit.

Put 'em on whenever the pins are exposed . . . and especially when you're shipping 'em off to support for repair.

PLAY IT BY EAR

Your Chinook (CH-47) landing gear wheels take a lot of weight and punishment. Rim and wheel bolts can get damaged. So, before you take the axle nut off on a wheel removal, deflate the tire to at least 20 PSI. Prevents the possibility of a . . . POW! !

NEUTRAL POSITION, PLEASE!

Just after you Cayuse (OH-6A) throttle jockeys touch terra firma move the cyclic to neutral and leave it there. Otherwise, under windy conditions, the main rotor blades can make bologna out of the tail boom. 'Course the droop stop ring prevents downward blade travel only after centrifugal force is lost during engine stopping and starting.

AIR MOBILITY

MORE SUDS AND SOLVENT...

LESS MAINTE

'Round and 'round she goes and where she stops, everybody knows—right in the vitals of your HueyCobra (AH-1G) . . . or any other chopper for that matter!

There's no getting away from the clouds of dust in the Dry Season. The rotor blades whip it into every nook and cranny. It settles on oily cables, clings to exposed actuator rods and settles in electrical components.

Left to do its dirty work, this grit and grime will eat away at cables, seals and set the stage for corrosion—unless you keep your bird clean.

Whether you take your baby to the drycleaners or the laundry depends on what cleaning facilities you've got going for you.

AIR MOBILITY

MORE SUDS AND SOLVENT...

LESS MAINTE NANCE SWEAT

THERE'S NO END TO THE DUST AND DIRT. BUT HERE'RE A FEW TIPS TO MAKE YOUR CLEAN-UP EASIER.

TELL IT LIKE IT IS, CONNIE.

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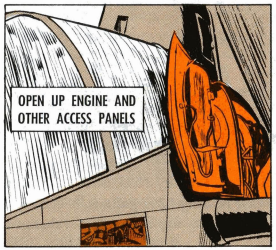
DRYCLEANING PROCESS

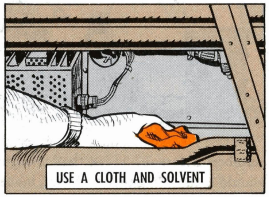
No water handy? You've got your work cut out for you. So, use drycleaning solvent, P-D-680, Type I. FSN 6850-281-1985 will get you a 1-gal can.

Be sure you never use the solvent around oxygen because the two can mix to form a highly explosive vapor.



Opening up all the access panels and cleaning the birds' innards is most important. Getting rid of dirt, oil and grease will give you clean components and lines . . . real important when you're trying to track down oil, fuel or hydraulic leaks.

Clean with a cloth or sponge wet with solvent.



PS MORE

NANCE SWEAT

DRYCLEANING PROCESS

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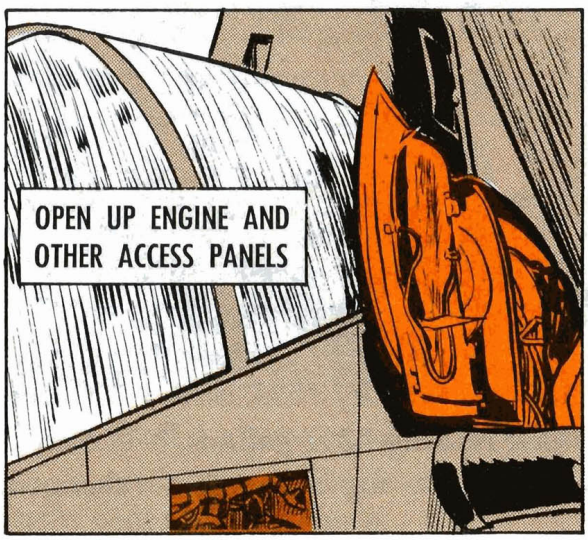

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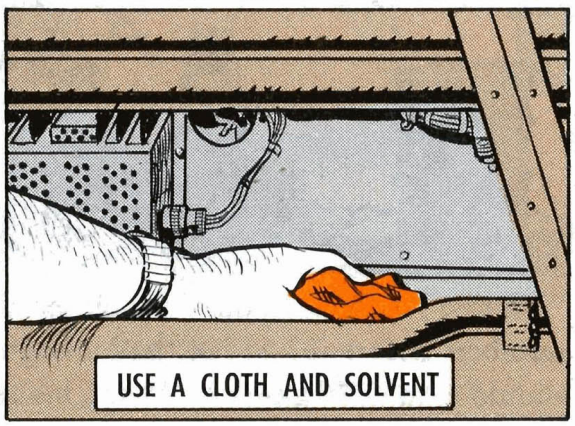


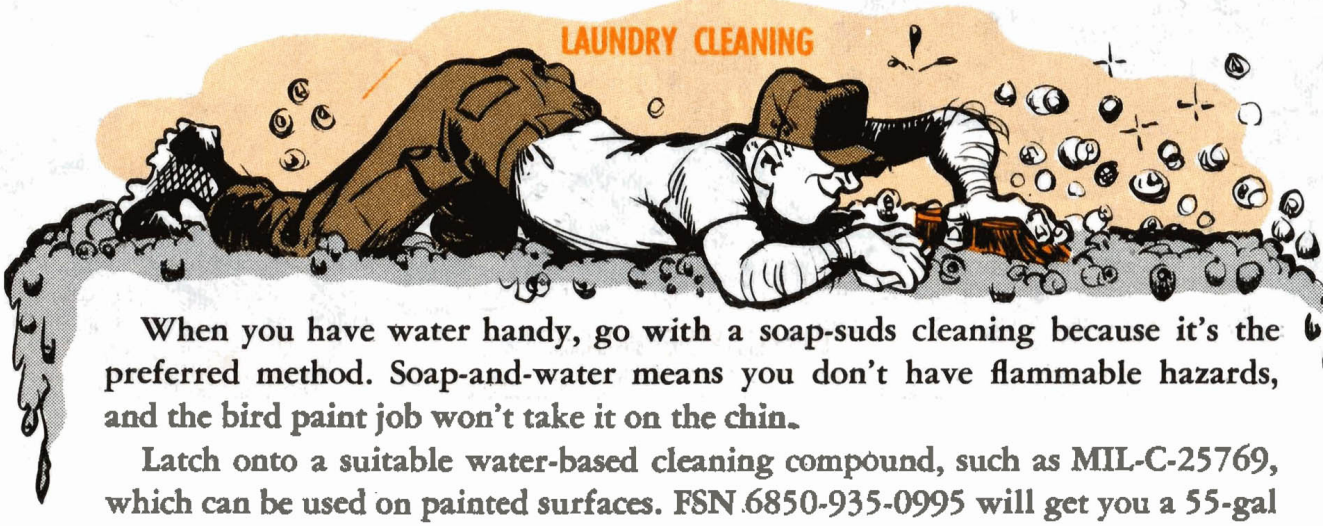
P.S. MORE

Let the solvent set a minute or so to give it a chance to work. Then agitate the area with a cloth or sponge to loosen and remove the grime.

Wipe the area thoroughly dry with a clean wiping cloth.

Keep the dry cleaning solvent off transparent plastics because it'll damage the plastic.

To guard against skin corrosion, especially in salt water areas, wind up the dry cleaning process by using solvent to spot-clean the exterior of your bird.



When you have water handy, go with a soap-suds cleaning because it's the preferred method. Soap-and-water means you don't have flammable hazards, and the bird paint job won't take it on the chin.

Latch onto a suitable water-based cleaning compound, such as MIL-C-25769, which can be used on painted surfaces. FSN 6850-935-0995 will get you a 55-gal drum of liquid concentrate. FSN 6850-935-0996 is a good number for a 5-gal pail of it.

Mix one part concentrate to 3-15 parts water, depending on how strong you want it.

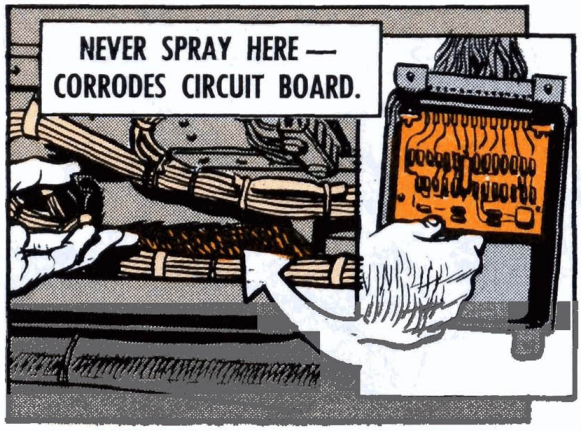
Spray, mop, sponge or brush the mixture on the exterior of your bird. Keep it off the canopy because it may damage the plastic if left on for any length of time.

While you're at it, have a look-see at the fuel quantity decal. Birds with serial numbers before G7-15786 had a bogus decal reading "247 gallons." The decal should read "270 gallons." If not, make a note in the log book to get it changed, pronto.

Never pressure spray your bird. You want a continuous flow of compound or water rinse at no more than about 5 PSI.

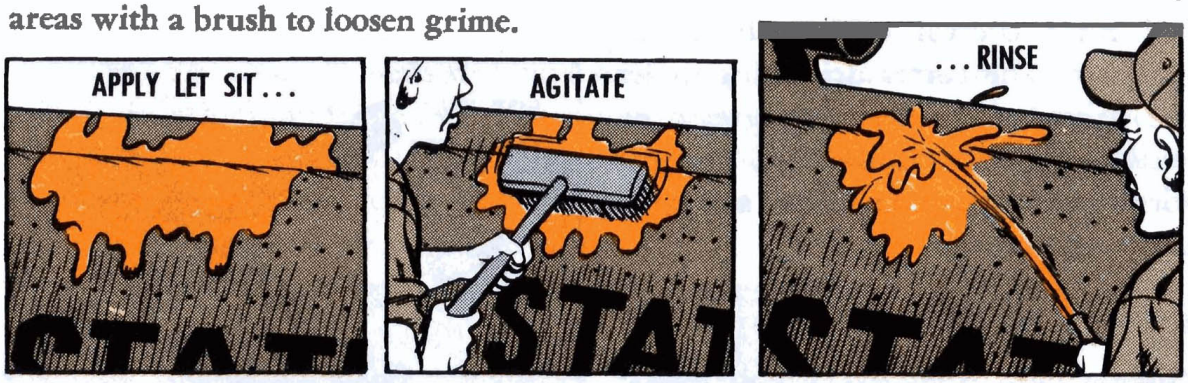
A pressure spray directed at the access door for the impedance matching network, for example, can really foul up the works.

Moisture forced inside the cover will corrode the contact points. Some of the radios will be knocked out, for real.

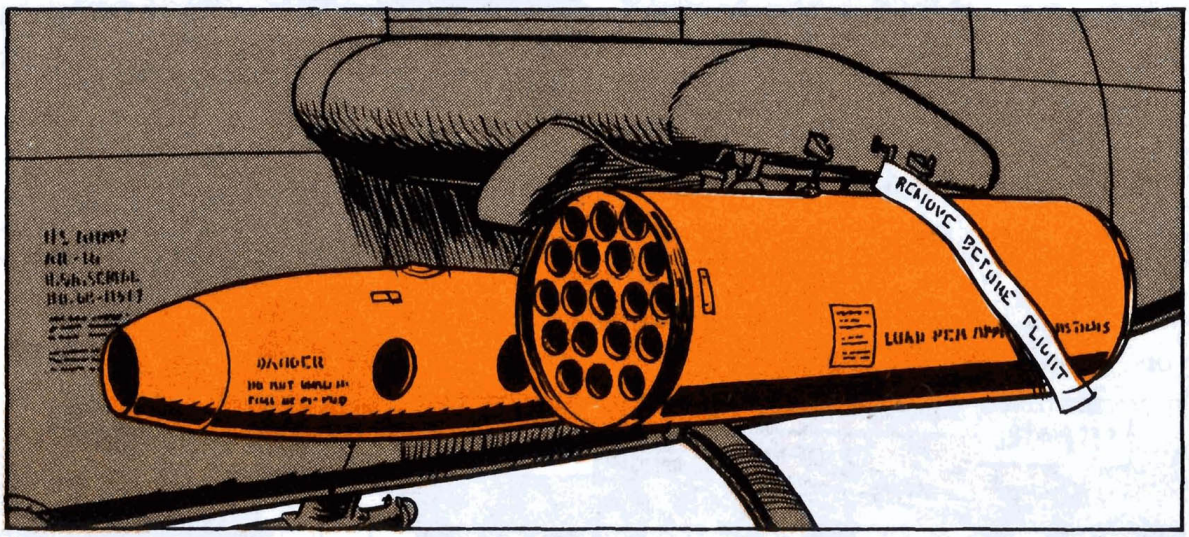


The contacts are coated so you don't clean 'em; if you do, you'll remove the protective coating. The only maintenance action is to change a corroded plastic card.

For the best cleaning results do one section at a time. Leave the compound on the skin a few minutes because dirt tends to harden on exterior surfaces. Rub dirty areas with a brush to loosen grime.



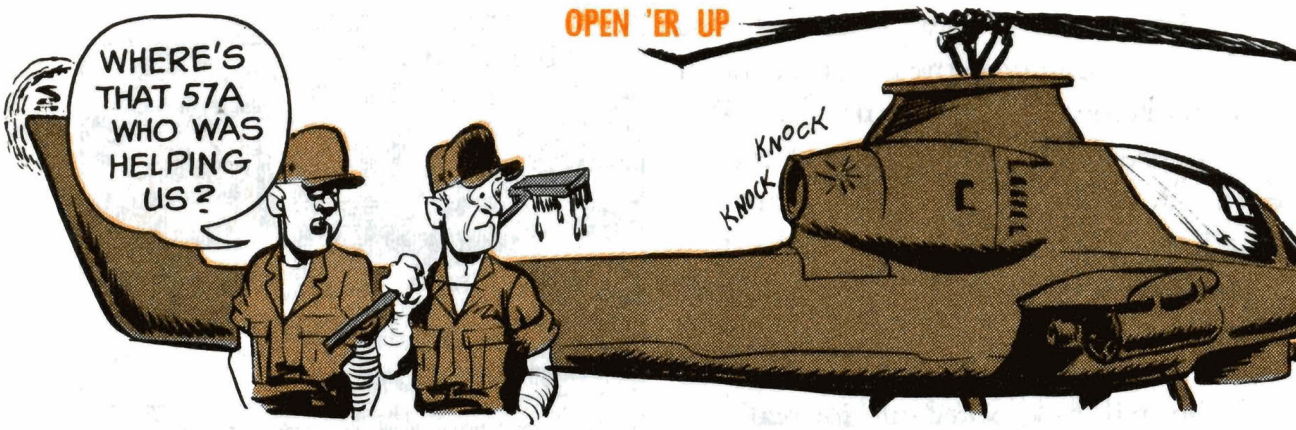
Don't forget the weapons subsystem pods—they also get the "clean treatment."



Rinse off the compound before it has a chance to dry.

So much for exterior cleaning to protect the paint and head off corrosion. Your baby looks mighty sharp.

OPEN 'ER UP



Beauty is skin deep. The real savings of maintenance down-time and elbow grease comes by keeping the innards of your bird clean.

Clean parts wear longer. Take the tail rotor control cables, chain and sprocket. The rotors drive dirt under the driveshaft covers. Any grease on these parts will hold the dust. The grit formed can eat on those cables and cause early replacement.

So, keep those tail rotor controls bone-dry. Latch onto some methyl-ethyl-ketone, TT-M261. FSN 6810-281-2785 will get you a 1-gal can.

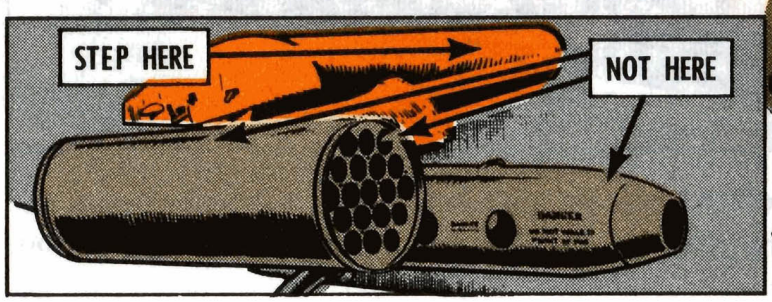
Careful, now! That stuff is strong and will take the hair off your chest, not to mention the paint off your bird. It'll even melt plastic.

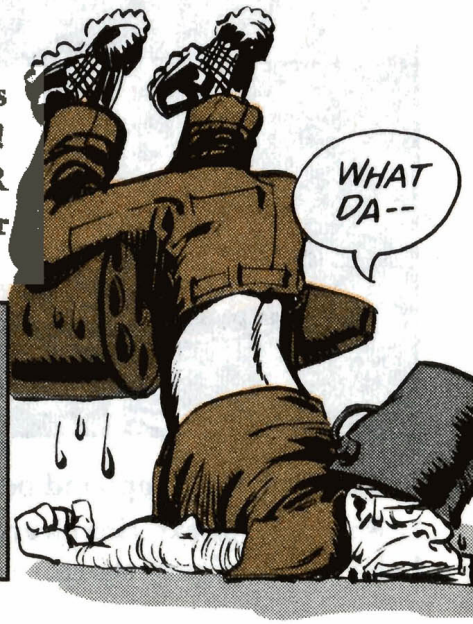
Use gloves and put the solvent on with a rag, making sure you use it only on the cables and chain. It does a terrific job on bare metal.

WATCH YOUR STEP

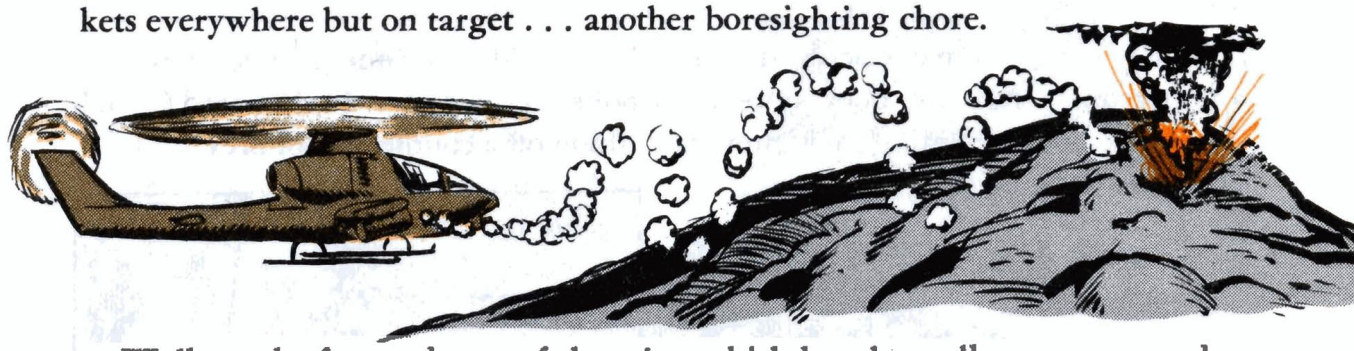
When you mount a wet bird to open up access covers be careful of slippery surfaces . . . slips hurt! !

Step only where you're supposed to step. NEVER plant your brogans on the weapons subsystems or you'll knock 'em out of kilter.





You know what that means? A lot of cain raised when the pilot sprays rockets everywhere but on target . . . another boresighting chore.



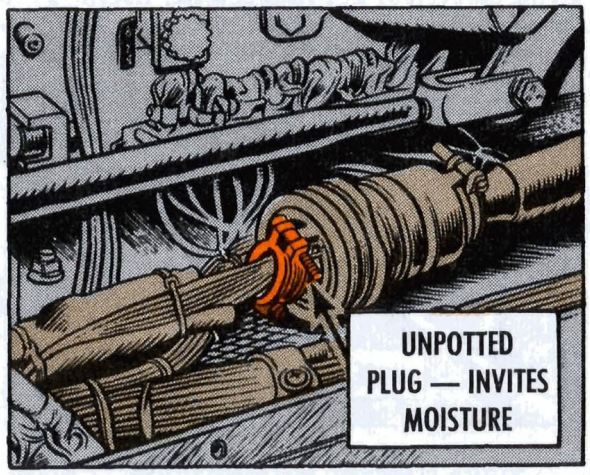
Walk on the forward part of the wing which has the walkway compound on it, not the trailing edge.

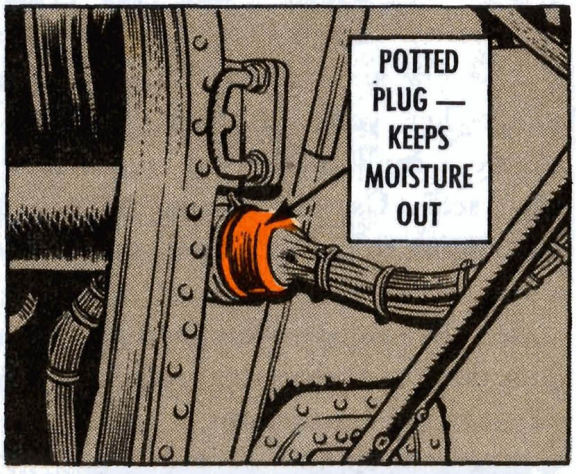
NEVER SPRAY SEALS, SERVOS

Be mighty careful where you direct any cleaning compound spray and when rinsing the compound off. Otherwise, you could force compound and water past seals and into un-potted electrical connections to foul up the works.

It's true! Some early birds still have some un-potted cannon plugs. It's a good idea to go over your charge at the first opportunity to see that the plugs are potted.

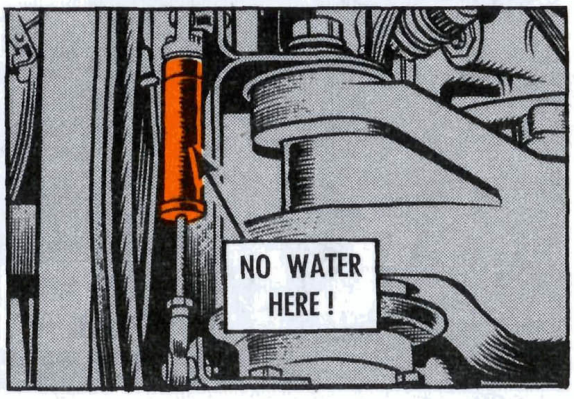
FSN 6850-880-7616 will get you an 8-oz tube of insulating compound, MIL-S-8660, electrical, paste form. Crewchiefs or radio repairmen can pack it in the plugs like putty—to keep moisture out.





Never use a direct spray on hydraulic servos and transducers, either. Otherwise, water will be forced past the seals and contaminate the hydraulic fluid. Wipe 'em off with a clean rag moistened with hydraulic fluid.

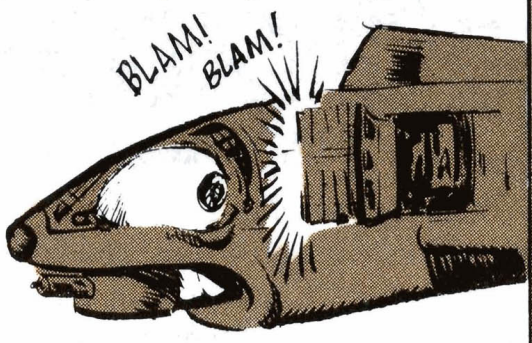
'Course, you also want to keep any direct spray off avionics equipment so you don't short out the radios.



P.S MORE

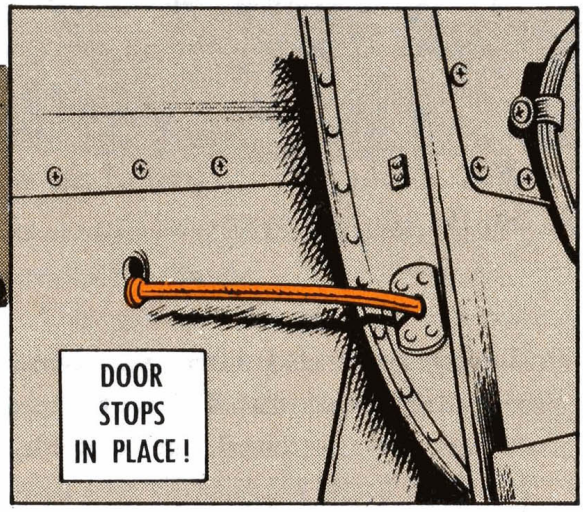
ACCESS DOORS SECURE?

When you go from one access door to another make sure the door stops are not broken or missing. They prevent bird parts from getting beat up.



Take the transmission door, for example. If the door stop is missing the door will chafe the transparent plastic.

You could be spending some spare time polishing out scratches, instead of polishing off a couple of cool brews! !

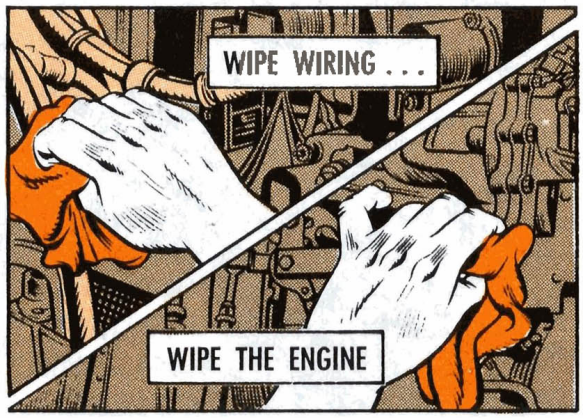


USE DRYCLEANING SOLVENT

In areas where you can't spray, such as the electrical compartment, use a clean rag moistened with drycleaning solvent.

Use dry air and wipe with a clean cloth where you have electrical wires or where a compound spray might penetrate seals. Use drycleaning solvent on the engine to get rid of oil, grease and dirt.

It's OK to spray compound on the engine deck and other areas relatively free of electrical connections.



Make sure the water drains. If necessary, use a rag to dry up trapped water.

Then you can button up your baby.

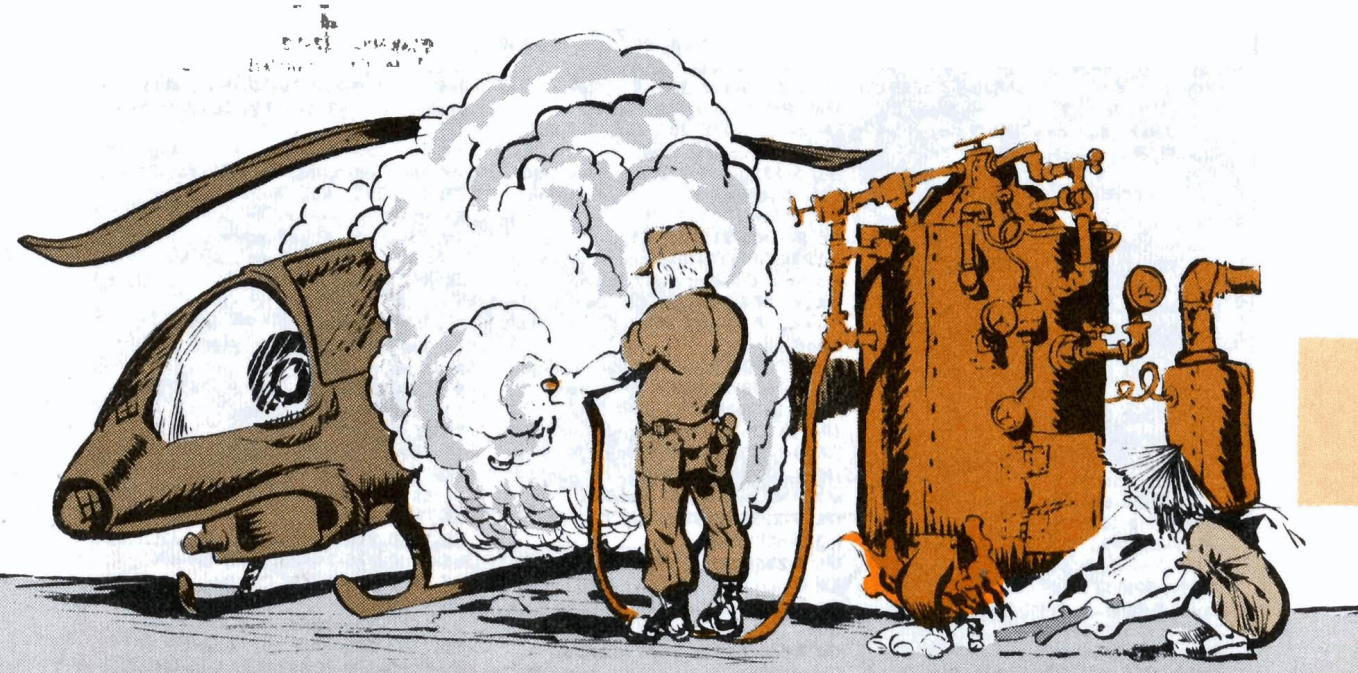
Before you wind up the cleaning chore and head for your hooch give the cockpit a good going over.

Odds are you don't have a vacuum cleaner, so latch on to a sash brush. A paint brush will also do the job. Sweep the dirt up and out.

Dirty transparent plastic can drive a pilot to distraction, so, make with a suitable polish. Plastic polish, FSN 7930-634-5340, does a first-rate job on taking dirt, oil and grease off the canopy.

Yessir-e-e-e, a cleaning is just about the best preventive maintenance you can pull on your bird. Schedule one, soon.

STEAM CLEANING? CAREFUL, NOW!



When a bird needs a paint job and your unit has a steam cleaner, never direct the pressure spray toward vital parts. The compound will be trapped behind seals and corrode components—you'll do more harm than good!

Spray the compound at 180 PSI maximum pressure, keeping it off propeller blades, hub seals, generators, starters, switches, relays, control actuators, bearings, rubber door seals, tires . . . just about everything but the bird's skin.

Rinse the compound off cleaned areas with plenty of water to head-off skin corrosion.

Cleaning compound, MIL-C-22542, will give good results. FSN 6850-753-4998 will get you a 55-gal drum; FSN 6850-753-5000, a 5-gal drum. Mix 1 to 1-1/2 gallons of the fluid with 60 gallons of water. Heat the mixture to 165-degrees F.

TM 55-405-3 (Jul 66) Chap 2, has the poop on steam cleaning. Maintain the cleaner according to the manufacturer's pub, backed up by TM 55-405-8 (Sep 66) Chap 5, Sect V.

This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 69), and Ch 2 (Oct 69), TM's, TB's, etc.; DA Pam 310-6 (Jul 69), and Ch 2 (Jan 70), SC's and SM's; DA Pam 310-7 (Sep 69), MWO's and DA Pam 310-9 (May 69), COMSEC Pubs.

TECHNICAL MANUALS

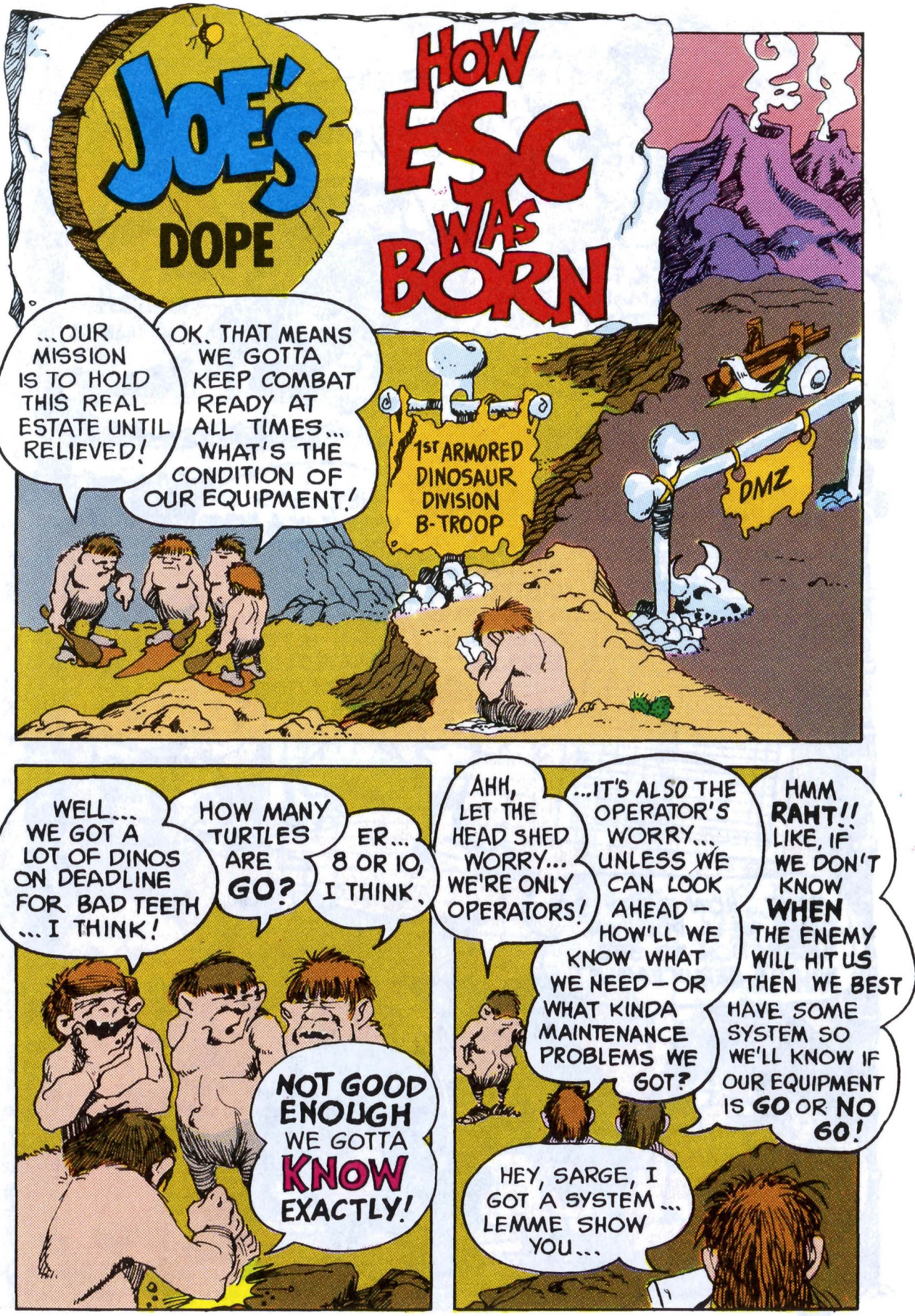
TM 3-1040-224-12, C3, Dec. Stewart-Warner Mdl 3260101-4 AN-M4/B 3½ CFM Flame Thrower Pwr Drvn Recip Compressor.
TM 3-6665-267-12, Nov, XM3 Acft Mtd Concealed Personnel Detector
TM 3-6665-271-10, Dec. M7 Alpha Uranium Oxide Radioactive Test Sample Oper Manual.
TM 5-2230-201-20P, Sep, Rail Track Wrench: All.
TM 5-3805-201-15, C4, Jan, Earth Mov Equip Loaders.
TM 5-3805-201-20P, C2, Jan Earth Mov Equip Loaders
TM 5-3805-207-15, C8, Dec, Earth Moving Equip Loaders.
TM 5-3805-211-20P, Oct, Earthmoving Equip Graders.
TM 5-3805-329-20P, C1, Jan, Earth Mov Equip Loaders.
TM 5-3810-201-12, C1, Jan 40 Ton Crawler Crane-Shovels.
TM 5-3810-206-12, C1, Jan, 40 Ton Crawler Crane-Shovels.
TM 5-3810-232-12, C1, Oct, Rough Terrain Cranes.
TM 5-3810-287-15, C2, Jan, 12½ Ton Crawler Crane-Shovels.
TM 5-3825-221-15, C3, Jan, Water Distrib.
TM 5-3895-275-15, C1, Oct, Bituminous Pavers.
TM 5-4110-210-14, C1, Dec. 5000 BTU Mech Panel Type Refrig Unit.
TM 5-4120-218-20P, Nov, 36,000 BTU Skid Mtd Air Conditioners.
TM 5-4120-232-25P, Sep, 38,000 BTU Air Conditioners.
TM 5-4120-285-25P, Sep, 18,000 BTU Compact Air Conditioners.
TM 5-4230-200-25P, Nov, Shower & Bath Equip.
TM 5-4310-229-20P, Oct, 250 CFM Air Compressors.
TM 5-4520-208-25P, C2, Dec, 400,000 BTU Space Heaters.
TM 5-5420-205-25P, C1, Jan, Mobile Ferry Aslt Bridge (MOFAB).
TM 5-6115-313-20P, Oct, 45KW 60 Cyc Eng Drvn Gen Sets.
TM 5-6115-323-15, C4, Dec, 1.5KW 60 Cyc Eng Drvn Gen Sets.
TM 5-6115-428-15, C1, Jan, 100 KW 60 Cyc Gen Sets.
TM 5-6115-328-20P, C1, Nov, 100 KW 60 Cyc Gen Sets.
TM 5-6115-440-20P, Oct, 7.5 KW DC Eng Drvn Gen Sets.
TM 5-6350-249-12, Dec, AN/GSQ-151 Restricted Area Anti-Intrusion Alarm Set.
TM 9-1005-212-25, C1, Jan, M1919A4 M1919A6 and M37 .30 Cal Machine Guns and M2 Tripod Mount.
TM 9-1005-223-20, C5, Dec, M14 M14A1 7.62-MM Rifles & M2 Rifle Bipod.
TM 9-1430-385-20P, Oct, Pershing.
TM 9-1430-510-25P, Aug, Hawk Radar Set AN/MPQ-37 (XO-2) (Range Only, Trailer Mtd).
TM 9-1440-381-20P, Nov, Pershing.
TM 9-2320-224-10, C7, Oct, M114 M114A1 M114A1E1 Carriers.
TM 9-2350-230-25P/2, C1, Jan, M551 Aslt Veh.
TM 9-2350-300-20P, C2, Sep, XM163 AA Gun.
TM 9-4940-221-20P, Nov, Paint Spray Gun.
TM 9-6625-1856-14/1, C2, Dec, Chaparral.
TM 9-6920-465-12, Sep, Shillelagh.
TM 10-500-12, Nov, Rigging Typical Supply Loads.
TM 10-500-18, Nov, Rigging ¼-Ton Cargo Trailers.
TM 10-500-32, Nov, Rigging 1½-Ton 2 Wheel Trailers.
TM 11-5820-549-12-1, Oct, AN/PRR-9 (XE-9) Receiving Set.
TM 11-5820-783-15, Dec, R-901/GR Radio Receiver.
TM 11-5820-784-15, Dec, R-902/GR Radio Receiver.
TM 11-6625-623-20P, Dec, MK-722/URC.
TM 11-6660-204-10, Oct, AN/TMQ-5 AN/TMQ-5A AN/TMQ-5B and AN/TMQ-5C Radiosonde Recorders.
TM 11-6720-246-12, Sep, KA-64A Still Pic Camera.
TM 11-6720-247-12, Dec, KS-98A and KS-98B Still Pic Camera Sets.
TM 11-6780-225-12, Sep, ES-82A Transportable Photographic Darkroom.
TM 55-1100-218-12-4, Dec, CH-34.
TM 55-1520-209-20PMP, Oct, CH-47.
TM 55-1940-220-15, Nov, 31 Foot DED River Patrol Boat.
TM 55-1940-220-20P, Nov, 31 Ft DED River Patrol Boat.
TM 55-2300-257-12-1, Nov, M113/M113A1 Carriers.
TM 55-2320-209-10-10, Nov, M35 M35A1 M35A2 6x6 2½ Ton Cargo Truck.
TM 55-2350-12-1, Nov, M551 Assault Vehicle Transportability Guidance.
TM 750-215, Aug, Retrograde for Refrig Equip.
TM 750-216, Aug, Retrograde for Food Cooking Baking and Serving Equip.

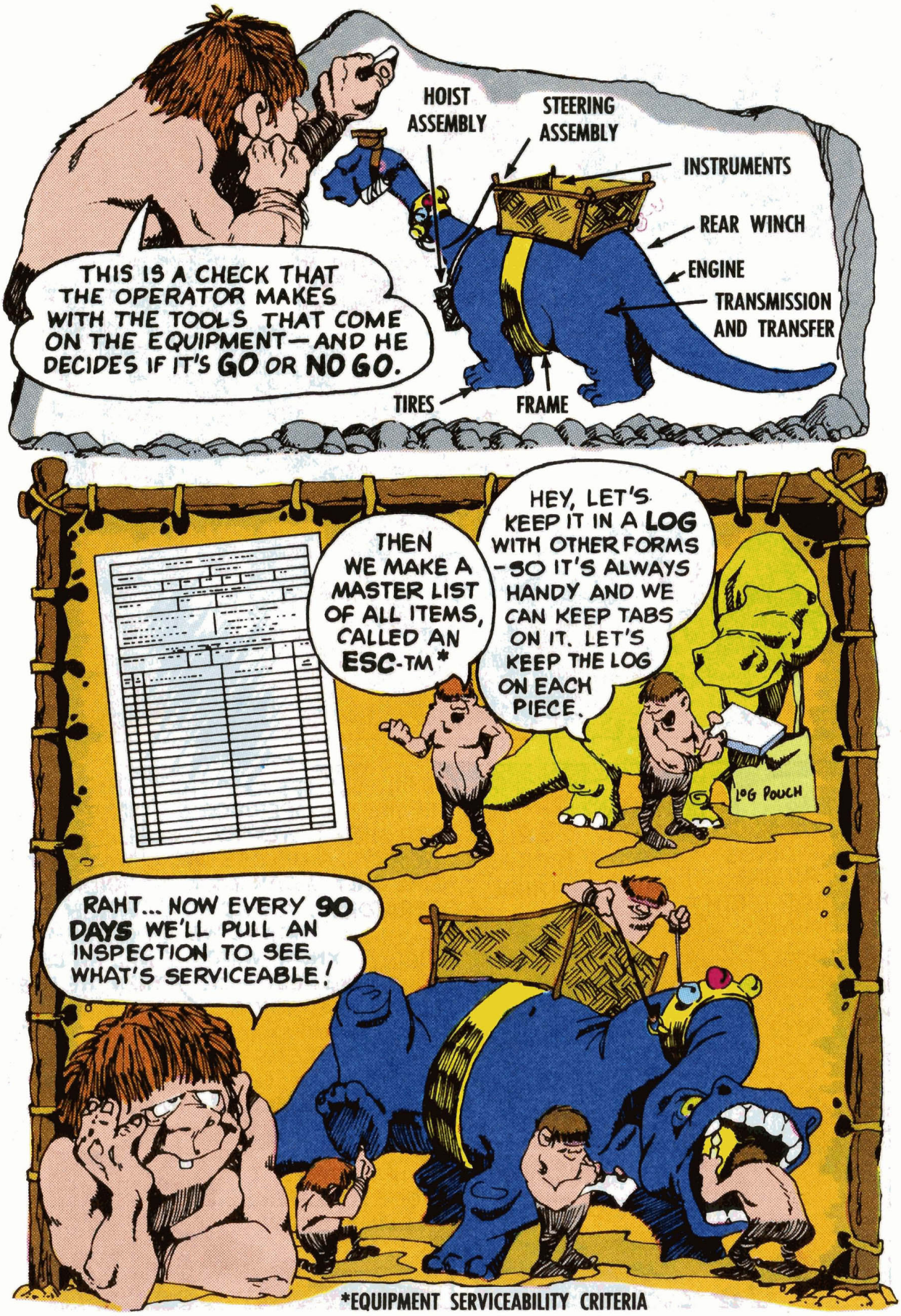
MODIFICATION WORK ORDERS

9-1290-328-30/1, Dec, M102 Howitzer.
9-2350-224-20/3, Dec. M48A3 Tank.
11-5810-221-35/10, Dec, TSEC/KW-7.
11-5810-221-45/7, Dec, TSEC/KW-7.
11-5895-293-30/6, C1, Dec, AN/TSQ-38.
55-1500-210-30/19, Jan, CH-47.
55-1500-210-30/35, Jan, CH-47.
55-1510-203-40/2, C2, Dec, U-6.
55-1520-204-40/5, Dec, OH-13.
55-1520-206-30/9, Dec, OH-23.
55-1520-209-40/9, C4, Dec, CH-47.
55-1520-210-30/18, C2, Jan, UH-1D.
55-1520-210-30/27, Dec, UH-1D.
55-1520-211-30/31, Dec, UH-1A-1B-1C.
55-1520-211-40/4, Dec, UH-1B.
55-1520-217-30/34, Jan, CH-54.
55-1520-221-20/5, Dec, AH-1G.
55-1520-227-30/18, Jan, CH-47.
55-1520-228-30/2, Jan, OH-58.

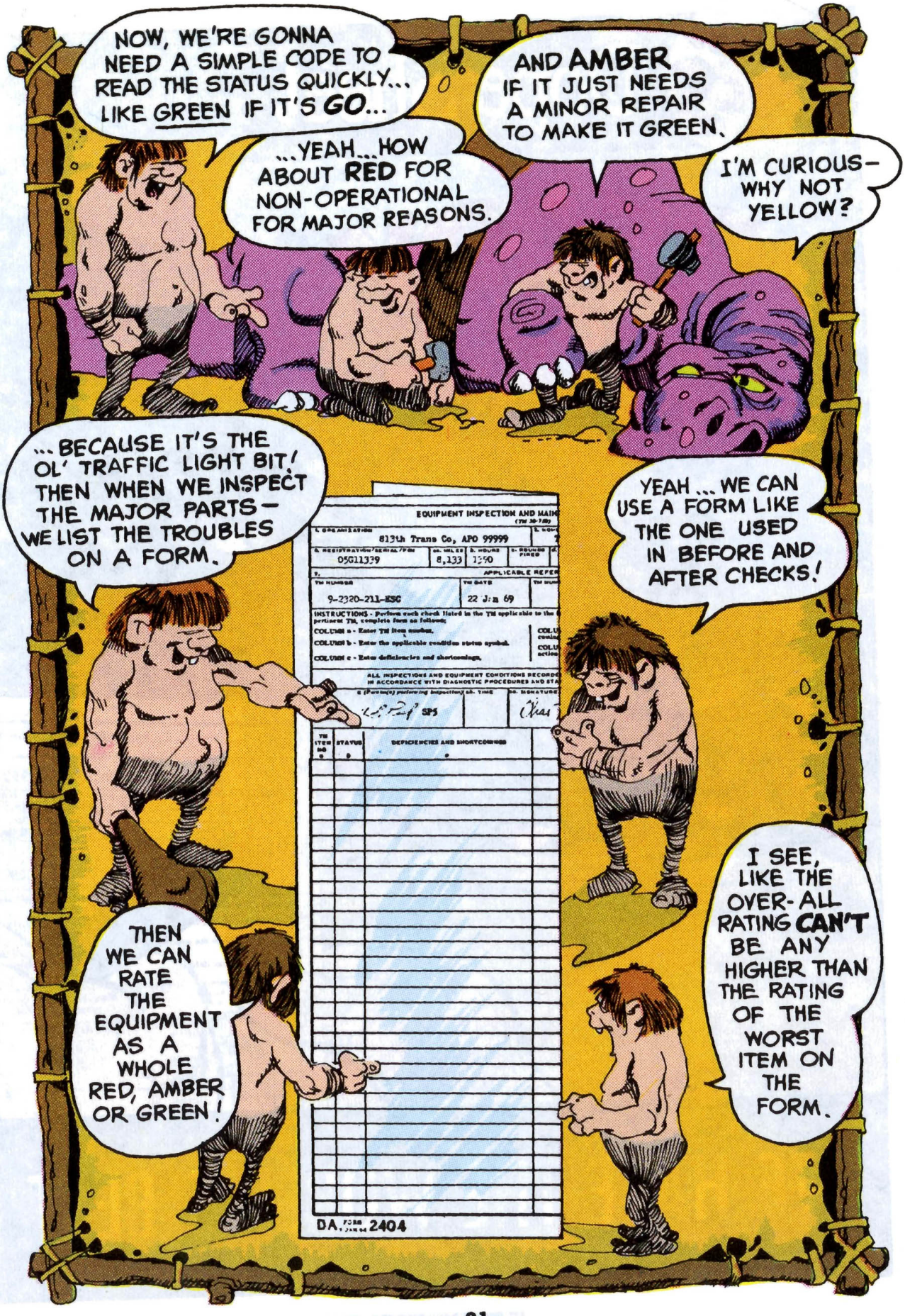
MISCELLANEOUS

AR 71-6, Nov, Army Materiel Type Classification.
AR 750-8, C3, Dec, CMMI.
DA Cir 310-85, Dec, Military Pubs.
DA Form 3078, Jun, Personal Clothing Request.
FM 11-23, Nov, IAW USASTRATCOM (Theater).
FT 155-Q-4, WC, Aug, Wind Cards: M44 M44A1 SP How; M114A1 and M123A1 Aux Propel How.
LO 5-4310-280-12-1 and -2, Nov, 600 CFM Air Compressors.
SB 38-100, Oct, Preservation Packing and Marking Material.
SC 5180-90-CL-R08, Oct, Linemans Tool Kit.

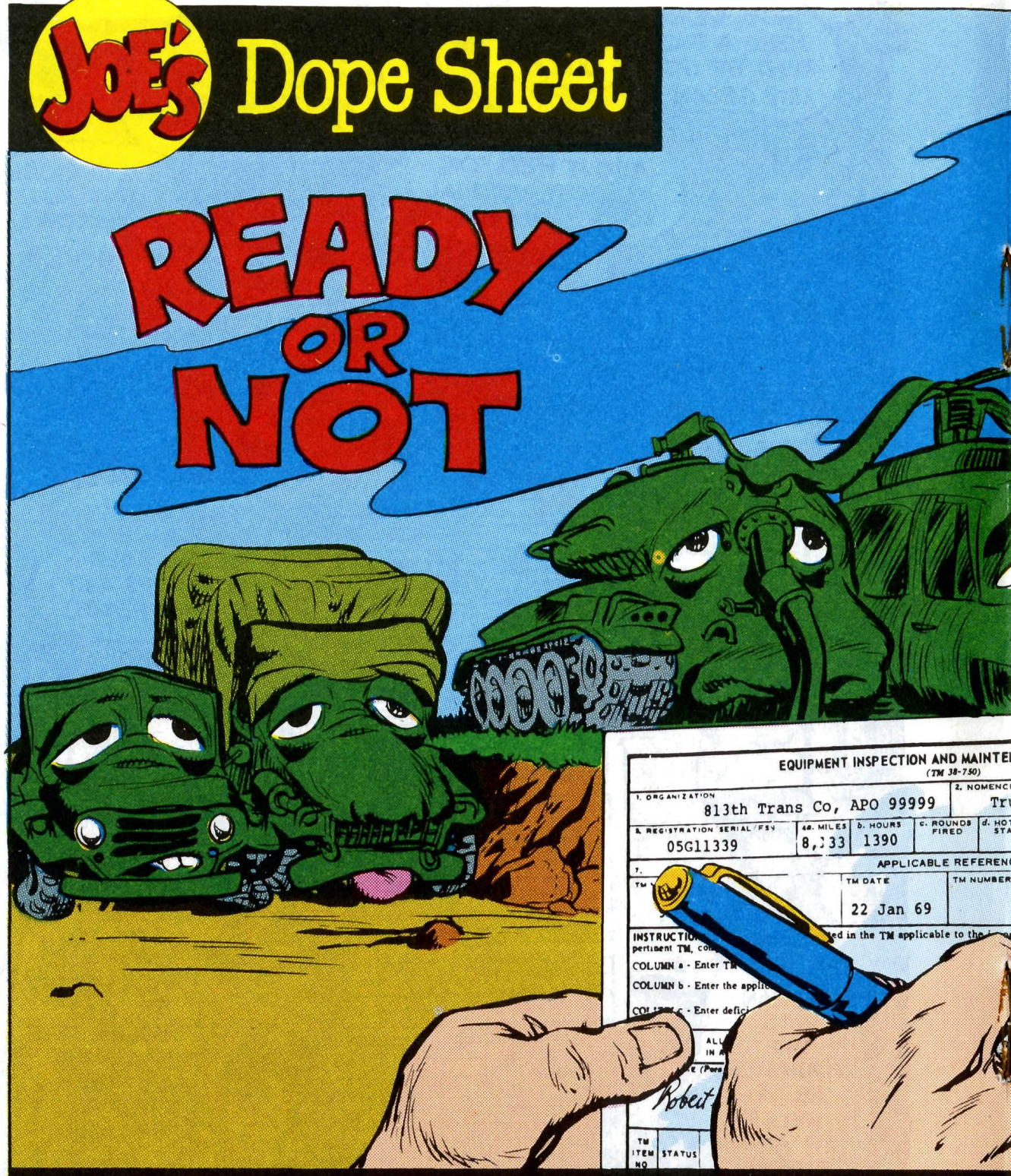

JOE'S DOPE
HOW ESC WAS BORN
...OUR MISSION IS TO HOLD THIS REAL ESTATE UNTIL RELIEVED!
OK. THAT MEANS WE GOTTA KEEP COMBAT READY AT ALL TIMES... WHAT'S THE CONDITION OF OUR EQUIPMENT!
1ST ARMORED DINOSAUR DIVISION B-TROOP
DMZ
WELL... WE GOT A LOT OF DINOS ON DEADLINE FOR BAD TEETH ...I THINK!
HOW MANY TURTLES ARE GO?
ER... 8 OR 10, I THINK.
NOT GOOD ENOUGH WE GOTTA KNOW EXACTLY!
AHH, LET THE HEAD SHED WORRY... WE'RE ONLY OPERATORS!
...IT'S ALSO THE OPERATOR'S WORRY... UNLESS WE CAN LOOK AHEAD — HOW'LL WE KNOW WHAT WE NEED — OR WHAT KINDA MAINTENANCE PROBLEMS WE GOT?
HMM RAHT!! LIKE, IF WE DON'T KNOW WHEN THE ENEMY WILL HIT US THEN WE BEST HAVE SOME SYSTEM SO WE'LL KNOW IF OUR EQUIPMENT IS GO OR NO GO!
HEY, SARGE, I GOT A SYSTEM... LEMME SHOW YOU...



*EQUIPMENT SERVICEABILITY CRITERIA

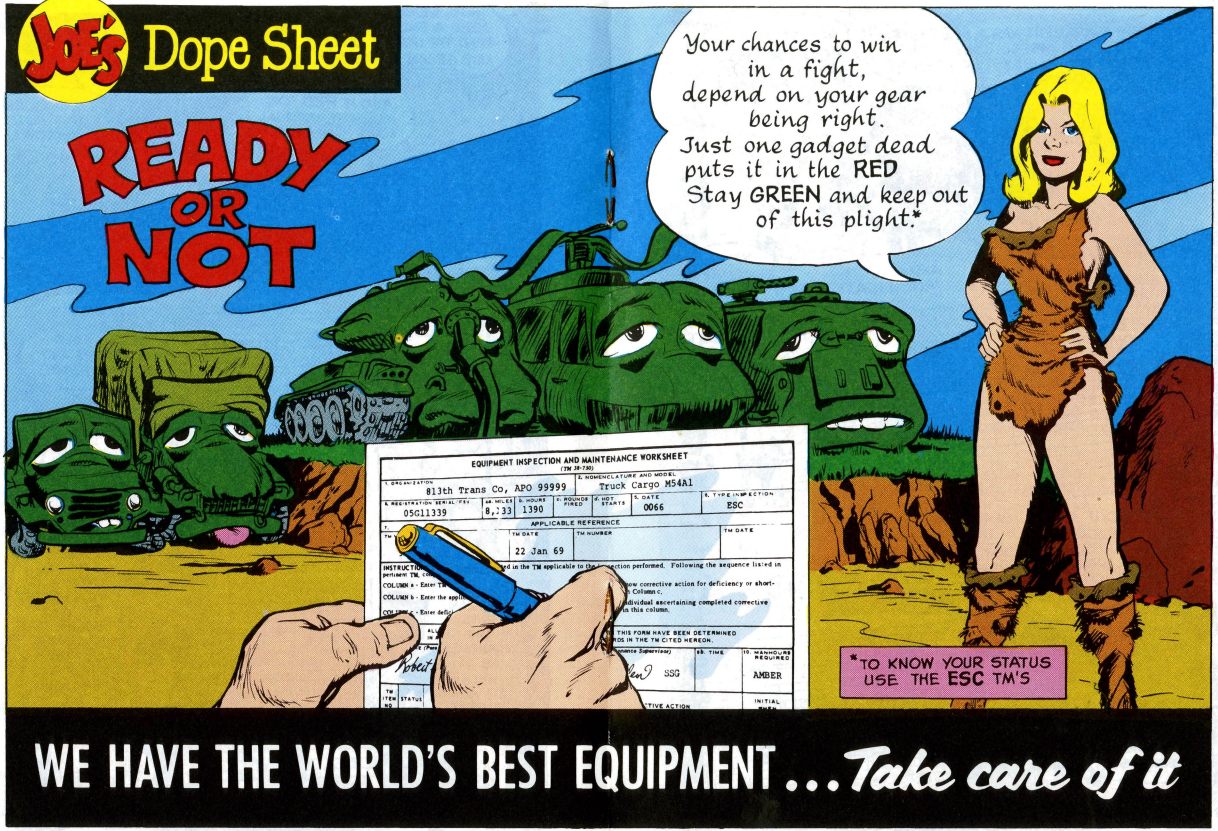

NOW, WE'RE GONNA NEED A SIMPLE CODE TO READ THE STATUS QUICKLY... LIKE GREEN IF IT'S GO...
...YEAH...HOW ABOUT RED FOR NON-OPERATIONAL FOR MAJOR REASONS.
AND AMBER IF IT JUST NEEDS A MINOR REPAIR TO MAKE IT GREEN.
I'M CURIOUS— WHY NOT YELLOW?
...BECAUSE IT'S THE OL' TRAFFIC LIGHT BIT! THEN WHEN WE INSPECT THE MAJOR PARTS— WE LIST THE TROUBLES ON A FORM.
YEAH ... WE CAN USE A FORM LIKE THE ONE USED IN BEFORE AND AFTER CHECKS!
EQUIPMENT INSPECTION AND MAINT
813th Trans Co, APO 99999
05G11339
8,133
1590
9-2320-211-ESC
22 Jan 69
DEFICIENCIES AND SHORTCOMINGS
DA, FORM 2404
THEN WE CAN RATE THE EQUIPMENT AS A WHOLE RED, AMBER OR GREEN!
I SEE, LIKE THE OVER-ALL RATING CAN'T BE ANY HIGHER THAN THE RATING OF THE WORST ITEM ON THE FORM.

JOE'S Dope Sheet

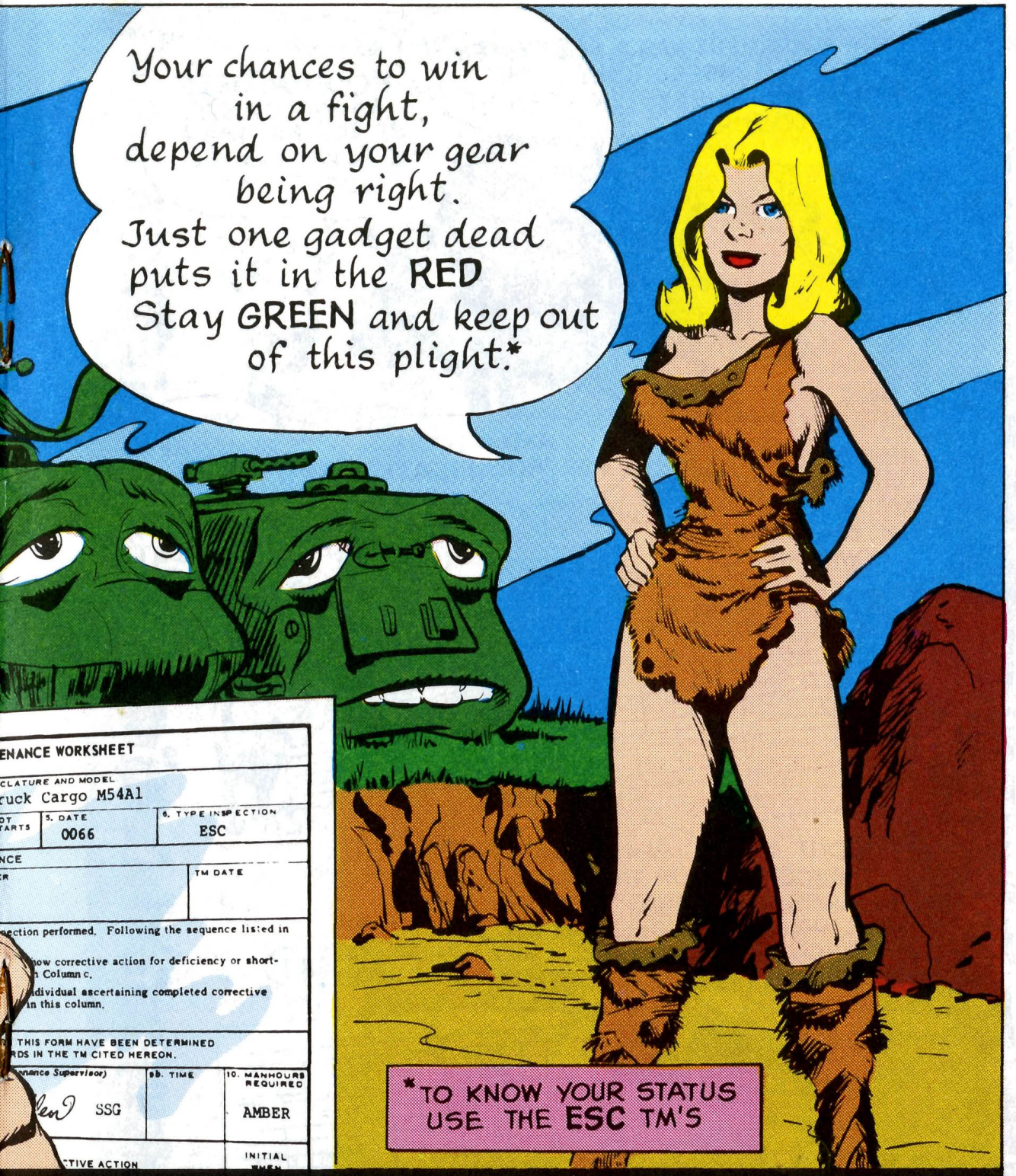


WE HAVE THE WORLD'S BEST EQ

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULL

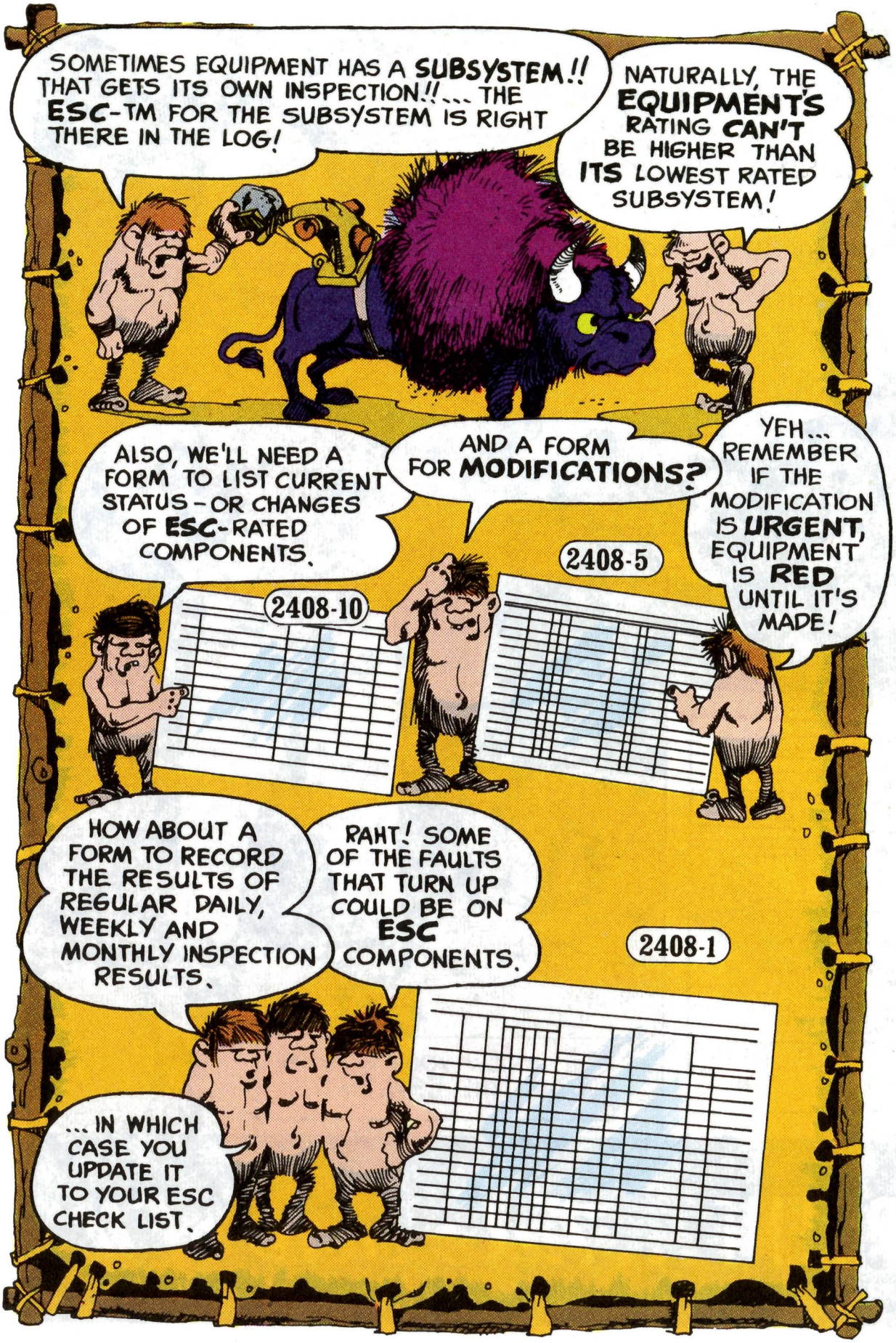


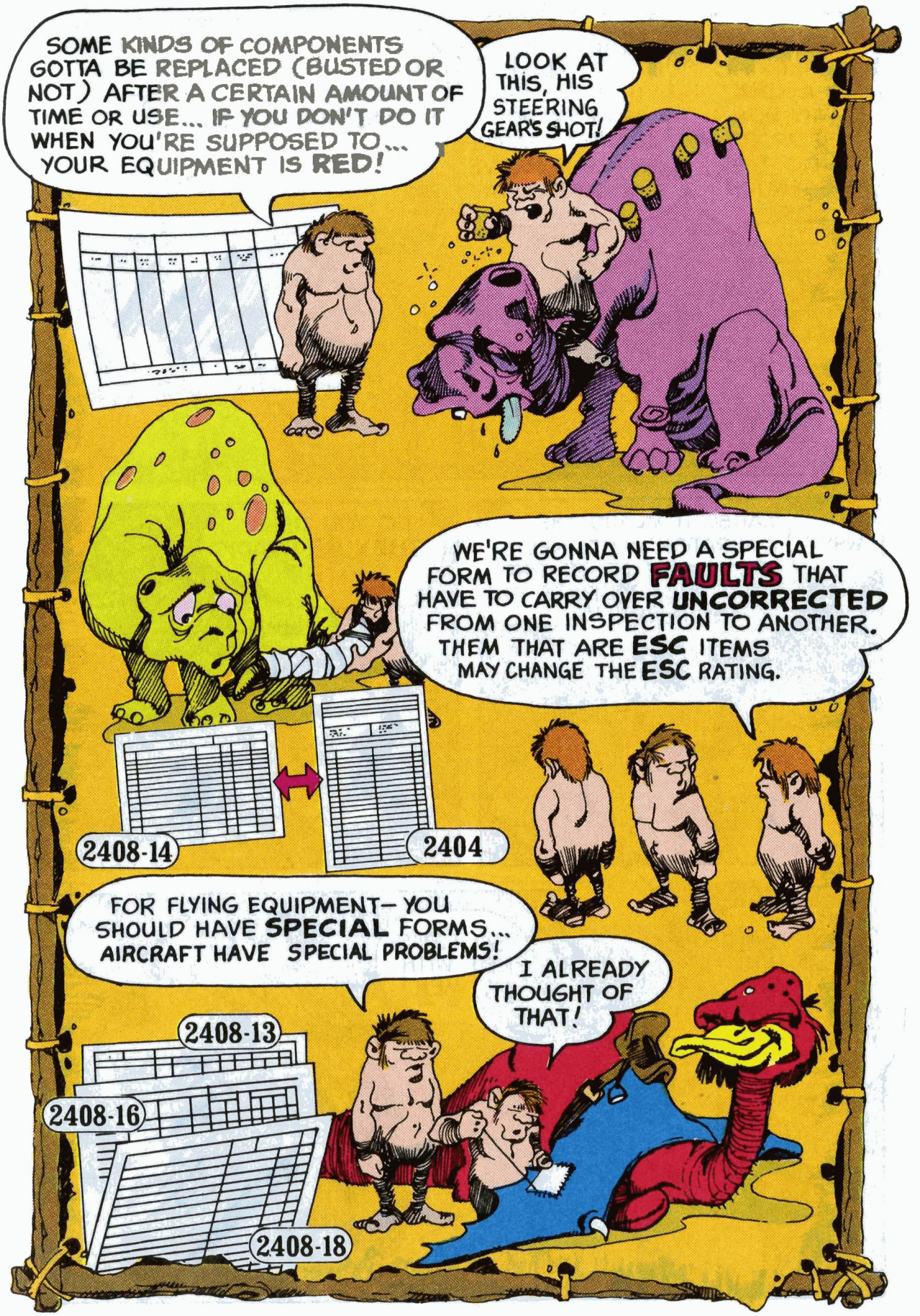
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.



QUIPMENT ... *Take care of it*

LLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

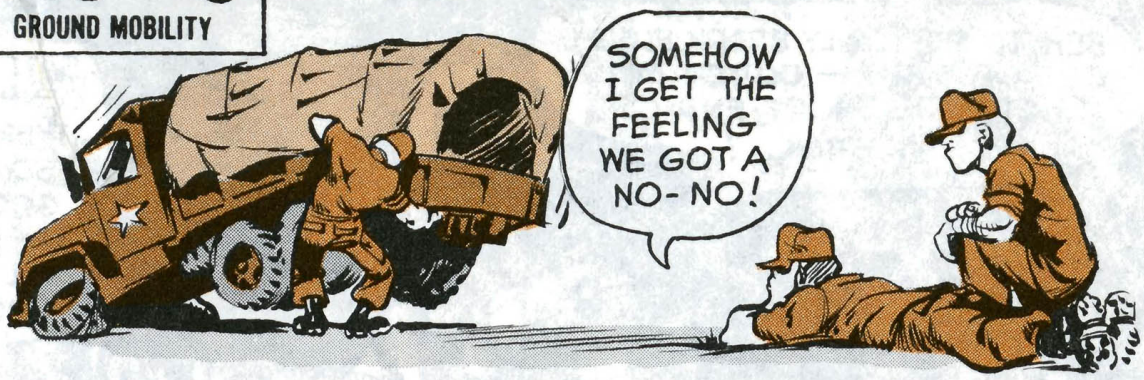

SOMETIMES EQUIPMENT HAS A SUBSYSTEM!! THAT GETS ITS OWN INSPECTION!!.... THE ESC-TM FOR THE SUBSYSTEM IS RIGHT THERE IN THE LOG!
NATURALLY, THE EQUIPMENT'S RATING CAN'T BE HIGHER THAN ITS LOWEST RATED SUBSYSTEM!
ALSO, WE'LL NEED A FORM TO LIST CURRENT STATUS - OR CHANGES OF ESC-RATED COMPONENTS.
AND A FORM FOR MODIFICATIONS?
YEH... REMEMBER IF THE MODIFICATION IS URGENT, EQUIPMENT IS RED UNTIL IT'S MADE!
2408-10
2408-5
HOW ABOUT A FORM TO RECORD THE RESULTS OF REGULAR DAILY, WEEKLY AND MONTHLY INSPECTION RESULTS.
RAHT! SOME OF THE FAULTS THAT TURN UP COULD BE ON ESC COMPONENTS.
2408-1
...IN WHICH CASE YOU UPDATE IT TO YOUR ESC CHECK LIST.


SOME KINDS OF COMPONENTS GOTTA BE REPLACED (BUSTED OR NOT) AFTER A CERTAIN AMOUNT OF TIME OR USE... IF YOU DON'T DO IT WHEN YOU'RE SUPPOSED TO... YOUR EQUIPMENT IS RED!
LOOK AT THIS, HIS STEERING GEAR'S SHOT!
WE'RE GONNA NEED A SPECIAL FORM TO RECORD FAULTS THAT HAVE TO CARRY OVER UNCORRECTED FROM ONE INSPECTION TO ANOTHER. THEM THAT ARE ESC ITEMS MAY CHANGE THE ESC RATING.
2408-14
2404
FOR FLYING EQUIPMENT— YOU SHOULD HAVE SPECIAL FORMS... AIRCRAFT HAVE SPECIAL PROBLEMS!
I ALREADY THOUGHT OF THAT!
2408-13
2408-16
2408-18

MAN, THAT'S A TERRIFIC IDEA, URK! ...WHY DON'T YOU DROP THAT INTO THE SUGGESTION BOX.
YEAH!! WHY, IF THEY MAKE THAT SYSTEM ARMY-WIDE, COMBAT READINESS WOULD IMPROVE 1000 PERCENT!
MAN, THINK OF THE LIVES SAVED ... EQUIPMENT EFFICIENCY, SUPPLY ECONOMY-ETC.
IT'LL NEVER WORK.
WHY?
'CAUSE IT MEANS THE OPERATOR HASTA KEEP THE FORMS UP-TO-DATE... GOTTA BE ACCURATE AND THOROUGH!!
DO YOU THINK THEY'RE READY FOR IT?
HMMM
...AND THAT'S WHY IT HAS TAKEN 50 THOUSAND YEARS TO BRING YOU ESC....
SO, LET'S GET WITH IT, MEN!

YOUR NEW 5-TON JACKSTANDS . . .

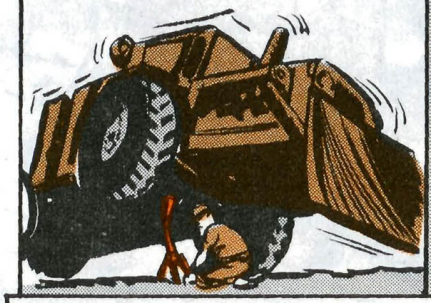
NO-NO's AND DO-DO's



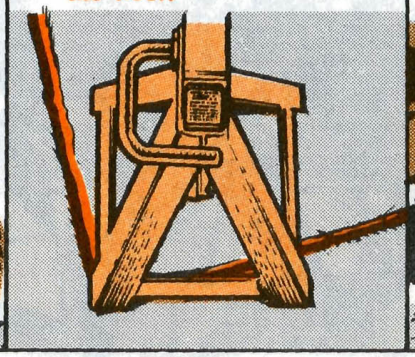
Nosy around and you can easily spot a "**no-no**" in the use of the new 5-ton trestles (FSN 4910-262-0392), now part of the No. 1 and No. 2 Common Tool Kits.

Sticking out like a sore thumb would be any of these goofs:

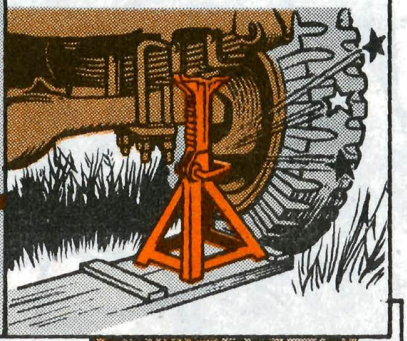
1. Overloading the 5-ton capacity.



2. Setting trestle on breaks in the floor.



3. Extending it up to the last notch.



4. Placing it under the weaker body sections, like the gas tanks, the running boards, and the bumpers.

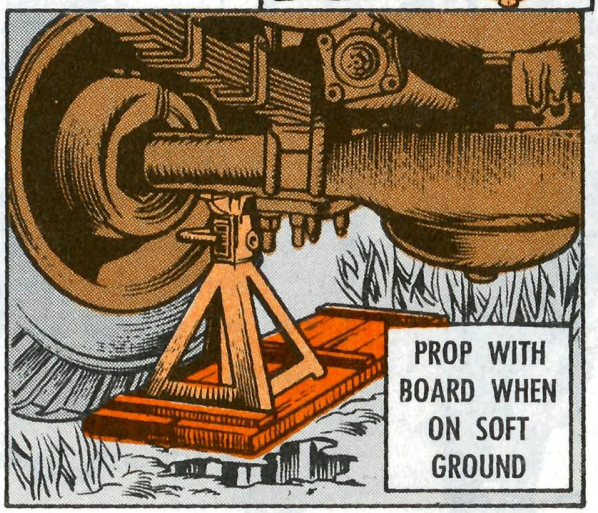
Of course, the "**do-do's**" come with the new item too — plenty of 'em.

A solid, secure and square fit is a must.

Put 'em up against the axle housings, the spring shackles and the frame rails.

When you're on unstable field ground, support each one with a flat rock or a strong board.

But, even if everything is sitting pretty, you definitely don't sneak a snooze under the shade of the ol' truck.



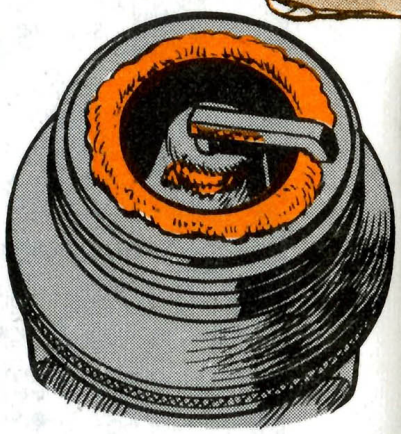
MAKE GLAD FROM SAD...

GOOD PLUGS

IT'S A ROUGH LIFE

It's usually not wear or heat that fouls plugs out. Just too much carbon. It's the way they're used that does it. Plugs in OD-type vehicles have it rough. They run on-post or in the boonies a lot. Either way, it's low-speed running. And they idle a lot. Engines carbon up fast, running slow or idling. But the script don't have to read like that.

You mechanics can grant them a new lease on life. All they need is a cleaning job . . . just like your uniform. Laundry is the word . . .



GOOD PLUGS FROM BAD

BEHOLD THE LOWLY SPARK PLUG OUT OF SIGHT — OUT OF MIND — IT GETS THE SHORT END OF THE PM STICK...!

SAVE US, CONNIE, THERE'S SOME GOOD LEFT IN ALL OF US.

AHHHH A REPRIEVE!

I'M INNOCENT. I WAS JUST OIL FOULED!

MISUSE PUT ME HERE!

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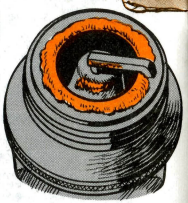
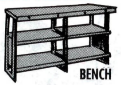


CLEANUP

You've got first-class tools. Be sure they're all there.

You need 110/115 volt AC, air, and a work bench.



BENCH

OUTLET

COMPRESSOR

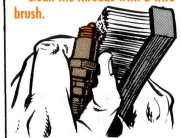
If your plugs are oily, get off the oil and guck.

Use approved solvent. No carbon tet or gasoline.

It's an open-air job — no fires or smoking.

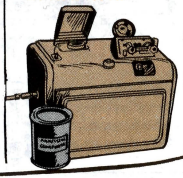
DUNK 'EM IN SOLVENT

Clean the threads with a wire brush.



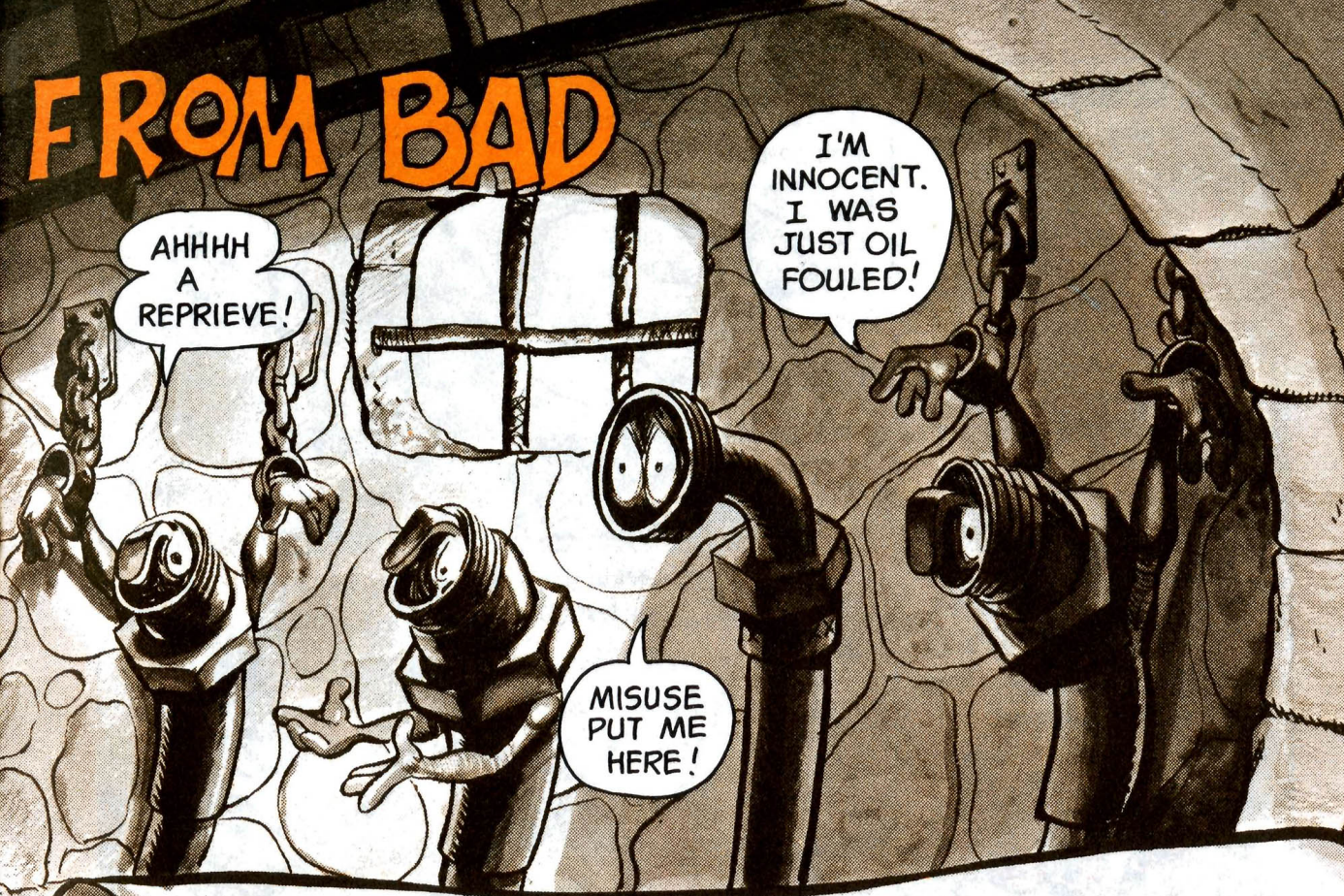
Then get going on the sand-blast machine.

Use 120 to 180 PSI.



PS MORE

FROM BAD



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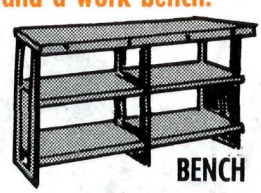

BENCH

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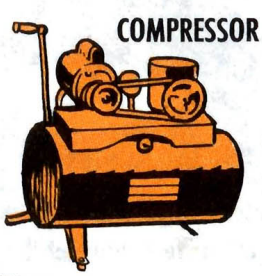

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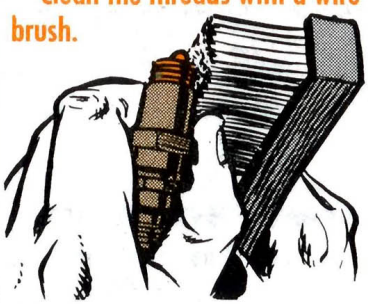
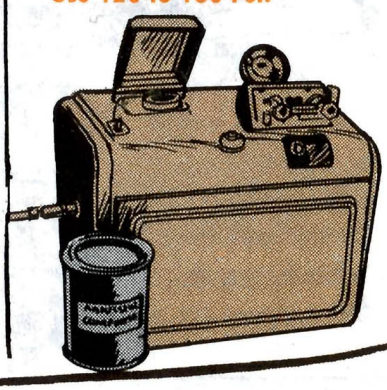
DUNK 'EM IN SOLVENT

Clean the threads with a wire brush.



Then get going on the sand-blast machine.

Use 120 to 180 PSI.

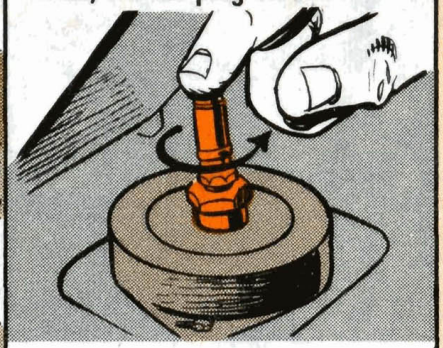


P.S MORE

Pick the adapter that's right for your plugs.

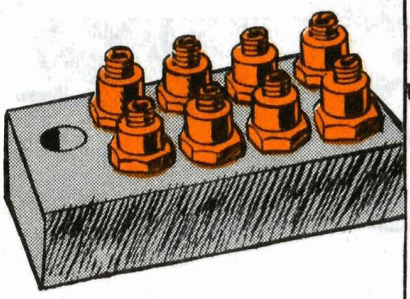
Use abrasive blast for 2 or 3 seconds. Blow out the sand with air blast.

On both abrasive and air blast, roll the plug around . . .

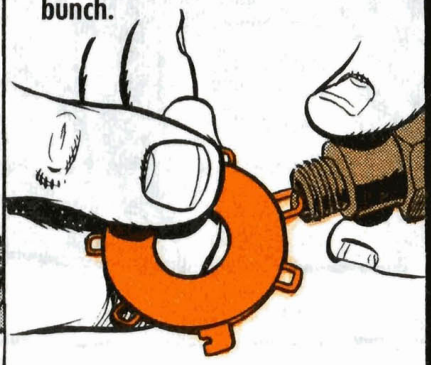


. . . Repeat 2 or 3 times. Then eyeball your plug.

Clean all the plugs from one engine at one run. That way they don't get mixed with plugs from some other engine. Keep them in racks as you go.



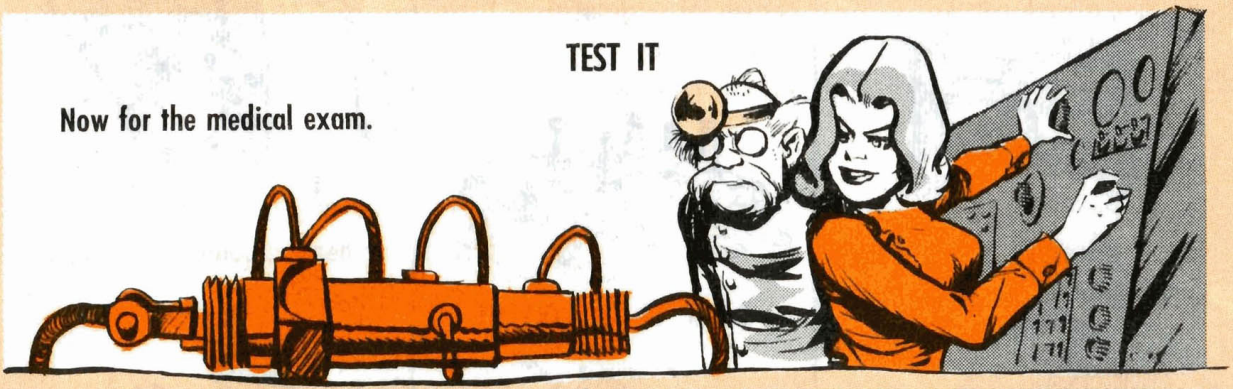
When you get a set of plugs blast-cleaned, gap-test the bunch.



Round-wire gap gages beat the flat kind.

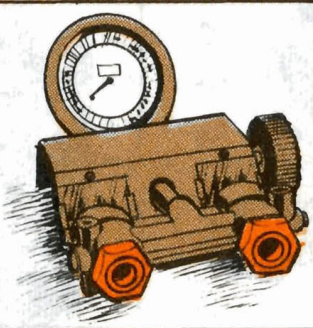
TEST IT

Now for the medical exam.

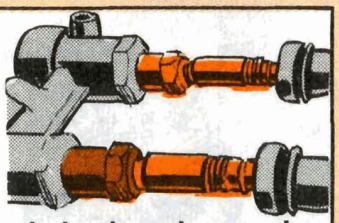


Use the metal adapter to fit your plug. Screw up finger tight, no more.

Set the gap gage dial.



You can check the cleaned plug against a new one of the same type and make.

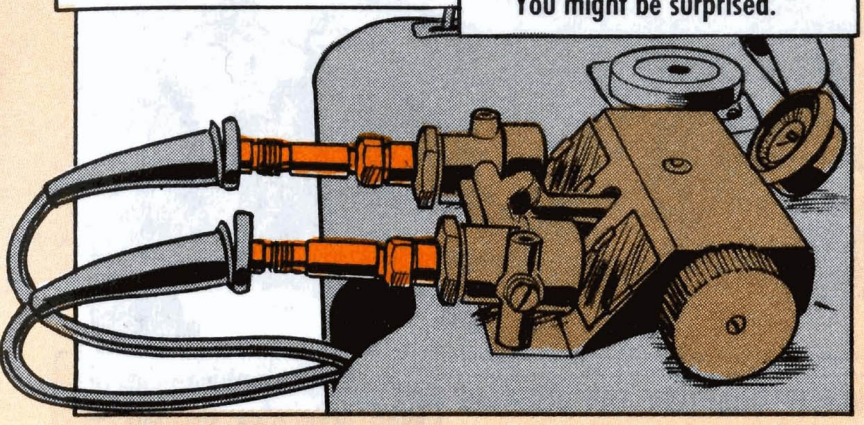


Set the gap to match the cleaned one and then put it in the other test bracket hole, adapter and all.

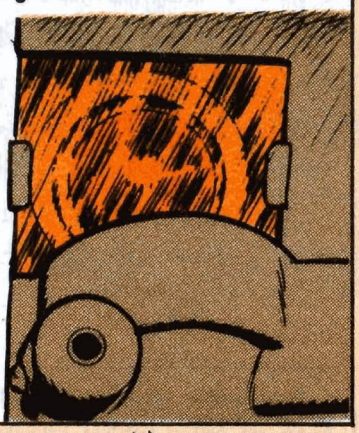
Then hook your juice wire to one, then the other.

Run up air-valve pressure each time.

You might be surprised.



The used plug might fire the longest.



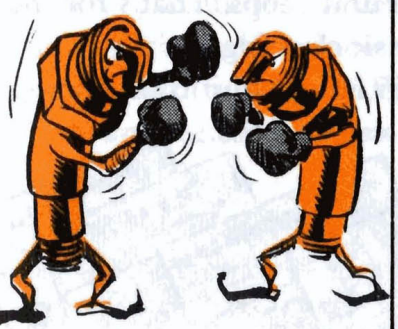
Fact, your old plugs might all show better spark.
So then you know why not to pitch out plugs too soon.
And you know waste makes plugs hard to get . . .
Fact, some guys might need 'em bad, but not get any—
Which is a favor to nobody but Charlie.

OTHER TRICKS

If you can't get regular abrasive, don't give up.
Silica sand or garnet sand or "red" granite sand will do.
Sift and screen it until you get the clay out.
And don't use such a charge for more'n a couple dozen plugs.
Then put in the regular compound when you can get it.
Fresh, straight-bristled wire brushes help a lot—
Naturally, the smart thing is to make plug cleaning a habit—
Then you'll already have good wire brushes in stock, and—
Then you'll have fresh abrasive in your PLL.

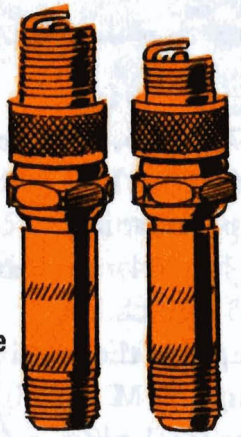
Never mix up one set of plugs with another.

It's especially bad to mix even same-size plugs between 2 kinds of engines.



You wouldn't want the plugs from an M151 in an M715, for instance.

That's wrong, because there's lots more to plug sizes than just the hole they'll screw into.



Be careful not to drop plugs.

That's an easy way to crack insulators. Porcelain won't bounce.

Cracks could come inside, out of sight. You might not even catch it on test.

Then the plug could fail when the going got rough, like in a fire fight.

PS MORE

A HEALTHY MEDICINE BAG

Some maintenance on your spark plug cleaner can be a real life-saver.

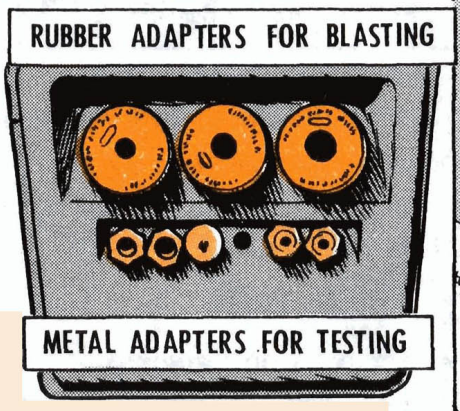
You'll probably have to do it yourself.

It's like coffee — most people want to drink, but nobody wants to wash the pot.

So don't mind being pot-minded — equipment running right will save your neck along with some others. . . .

Bug your supply clerk to keep an extra rubber adapter for your common-size plugs . . . and don't forget your other items. Commo generators, water purifiers, foggers, pumps, and beaucoup other stuff use plugs, too.

Have a spare metal adapter for each of your common sizes in the spare box, too.



A flat-face ignition-point file helps dress plug electrodes — but no major surgery, plizz.

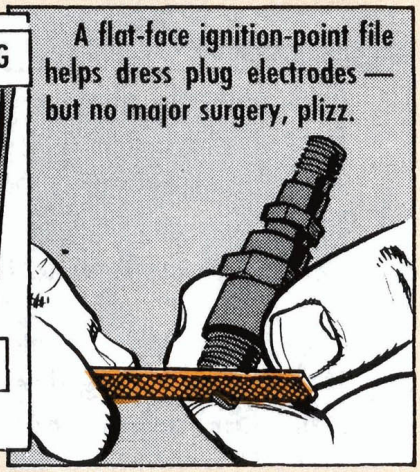
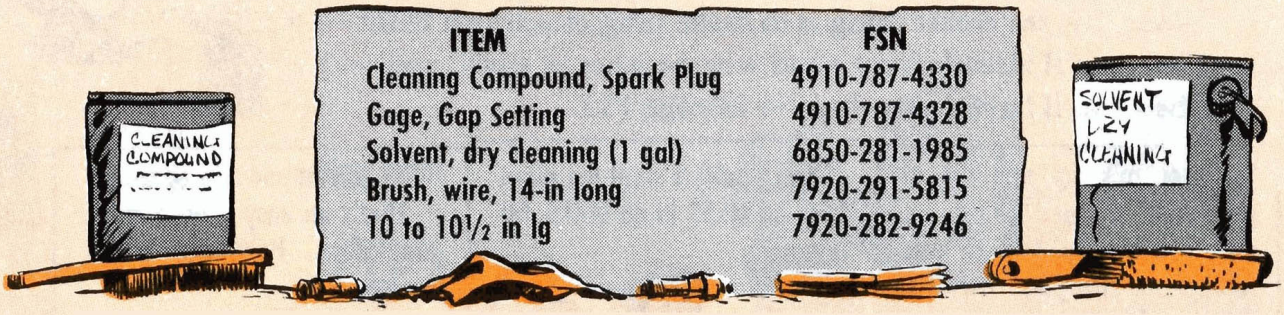


FIGURE BY THESE

Some numbers that could be handy are:



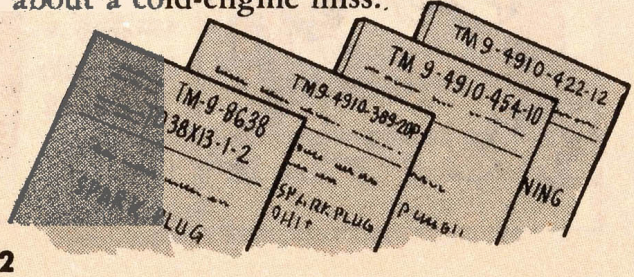
ITEM	FSN
Cleaning Compound, Spark Plug	4910-787-4330
Gage, Gap Setting	4910-787-4328
Solvent, dry cleaning (1 gal)	6850-281-1985
Brush, wire, 14-in long	7920-291-5815
10 to 10½ in lg	7920-282-9246

You'll do about as well with Gage, Gap Setting, FSN 5210-273-1935, in your Automotive Mechanic's Tool Kit.

For fine-wire aircraft-type cleaning sets, TM 9-4910-422-12 (Jun 64) or TM 9-4910-454-10 (Jul 65) pinch-hit pretty good, but don't apply those standards to vehicular plugs. TM 9-8638 (Dec 56) is fine for general plug information.

TM 9-4910-389-20P (Jun 62) goes great around unit shops. That's for the Champion basic cleaning kit.

So get with it, and quit complaining about a cold-engine miss.



5-TON EXHAUST TIE-DOWNS

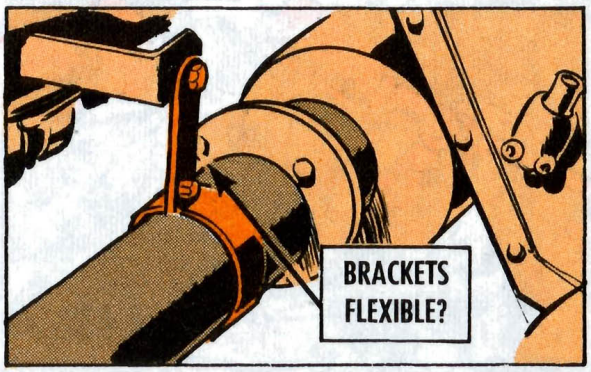
Dear Half-Mast,

I've been in the dark a long time on loose and cracking exhaust systems of the 5-ton trucks. Got a light?

SP5 S. T.

Dear Specialist S. T.,

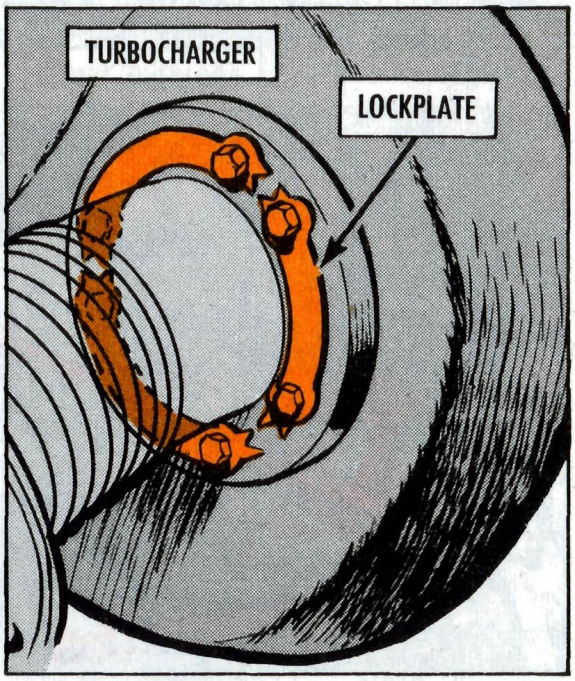
On the gasoline trucks (the horizontal pipe system), you look for excessive vibration first. Check the timing and the ignition. Check for loose engine mounts. Then, make sure your pipe mounting brackets are flexible. They'll crack if



too rigid. And whenever a nut works loose or it's removed, replace it with a new one. Old ones just won't hold.

If problems still poke you, requisition special self-locking nuts. For the 7/16-in studs, you use FSN 5310-057-7080 and for the 3/8-in screws, it's FSN 5310-950-0039.

The multifuel vertical exhausts with the 465-1 engine can be secured at the turbocharger by using 3 lockplates, FSN 5340-909-2503, on the adapter capscrews. Torque the capscrews 23 to 27 lbs-ft. Then, bend tabs over heads of capscrews.



You can stop flange cracks on the vertical pipe with these replacement parts: Spring, FSN 2990-121-6184; Bracket, FSN 2990-121-0686; Screw, FSN 5305-716-8175; Nut, FSN 5310-952-1872 and 3 washers, FSN 5310-809-3079. This hardware will give it flexibility.

DRAG LINKS — BUGGED?

You can't keep the bugs away from the 5-ton truck steering linkage with a magic spray. You need down-to-earth PM.

You've got lots of small parts in the drag links, the relay lever and the bracket. If any one goes kaput, you could be in a pinch, but fast.

Your truck can wander and weave. The linkage can wear, loosen — even snap.

You'd sure be looking for answers then.

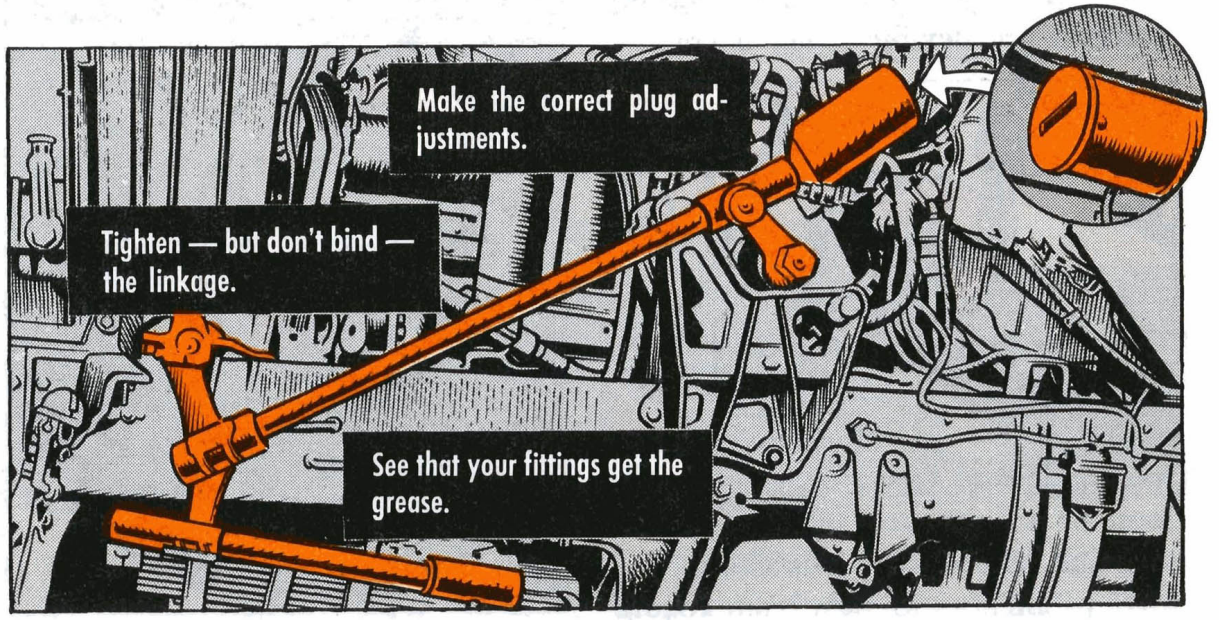
Is it a frozen bushing? A busted seal?

Maybe a cracked ball seat? Or spring action quit?

Hold one — and think.

You can head off breakdown if you cop the troubles before they begin.

Here's how it's done with the drag links:



With this plan and TM 9-2320-211-20 (Mar 63), you'll never get the wrong steer.

NOT FOR MULTIFUEL

If your 2-1/2-ton truck has a multifuel engine, don't bother lookin' for the "stop collar" mentioned in para 210, TM 9-2320-209-20 w/Ch 1, 2 & 3 (Aug 68). Only the gasoline-engine job has a stop collar on the front-winch drive-shaft.

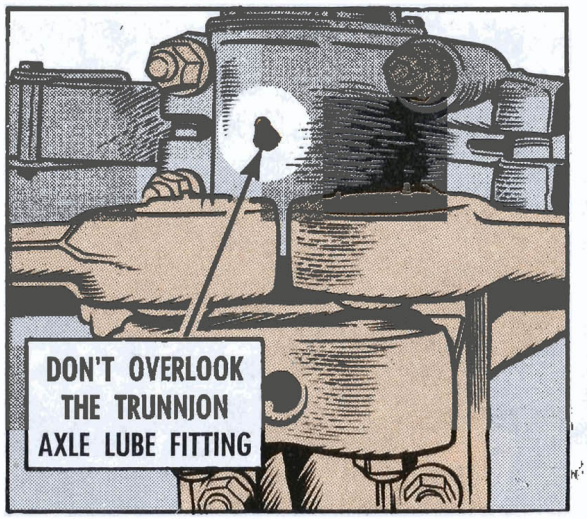
LUBE MUSCLE HELPS HUSTLE

Think the Rough Riders went out with Colonel Teddy R? You can get a rough ride yourself by overlooking your 2-1/2-Ton or 5-Ton Truck spring seat bearing lube points.

The 5-Ton takes "S" Service or 3,000-mile lubing; the deuce-and-a-halfs have to be lubed every 1,000 miles, the LO's say—

But some 5-Tonners get issued with plugs where grease fittings go—the de-processing crew overlooks the trunnion axle...somebody sees the plugs and thinks that means it's a sealed unit (there's 2, one on each side!).

So trunnion axles get chewed up, CMMI's give gigs, or deadlines sock it to you.



Cure: Be sure the grease fittings get put in and get used... with bearing caps loosened for the old grease to get out like the LO's say. And every "S" Service have your favorite mechanic check bearing adjustment . . . the -20 TM's give the adjustment technique. If your 2-1/2-ton doesn't have a plug or fitting, hand pack it

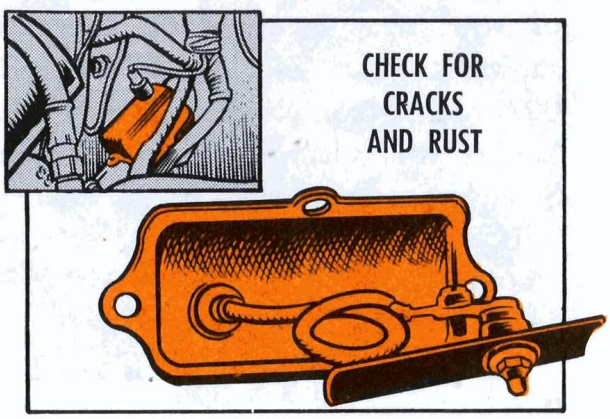
LONG SHOT, BUT...

If your 5-ton truck is getting on in years, check out its horn contact brush.

Three bad marks can show up on that small unit on the steering column under the hood—rust, a crack and too long a screw.

Anyone of these could trap you in a squeeze play. So, give it an eyeball.

You'll find it handy and easy to work with.



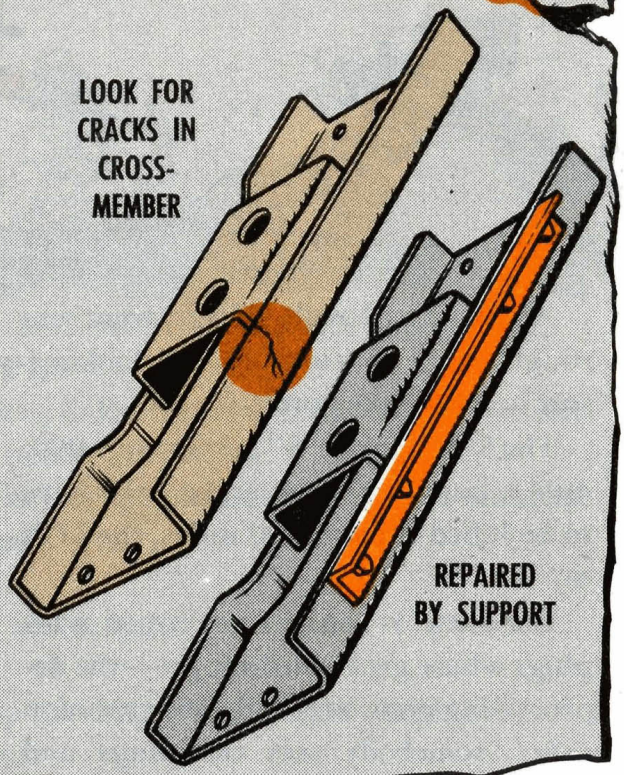
YOUR 2-1/2 TON TRUCK... CRACKED?

Wipe the dirt off the frame front crossmember of your 2-1/2-ton truck—especially if it's a multifuel engine job—and even more especially if it was built under Contract No. DAAE06-68-C-0007 or DAAE06-68-C-0011.

Now look close for cracks in that crossmember. Real close!

Find any? If so, get that truck up to your support—toot sweet—for a repair job. They'll weld the crack and then reinforce the crossmember to beef it up as per item 22, TB 750-981-4 (Oct 69).

If your truck comes under either one of those contract numbers, it gets the reinforcement anyway, even if the crossmember's not cracked.

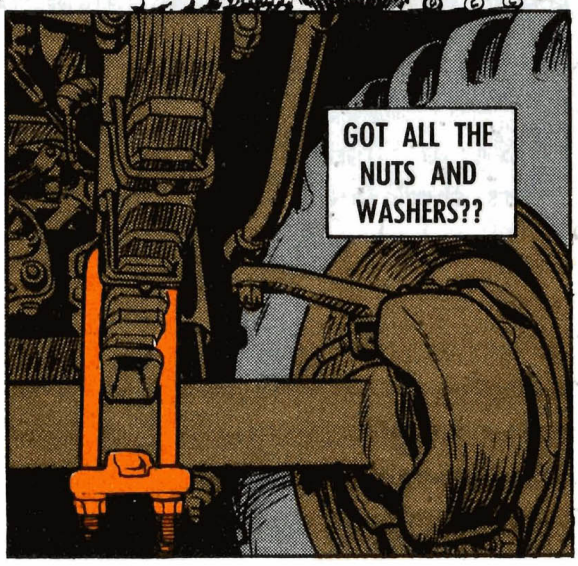


GOT THE NUTS?

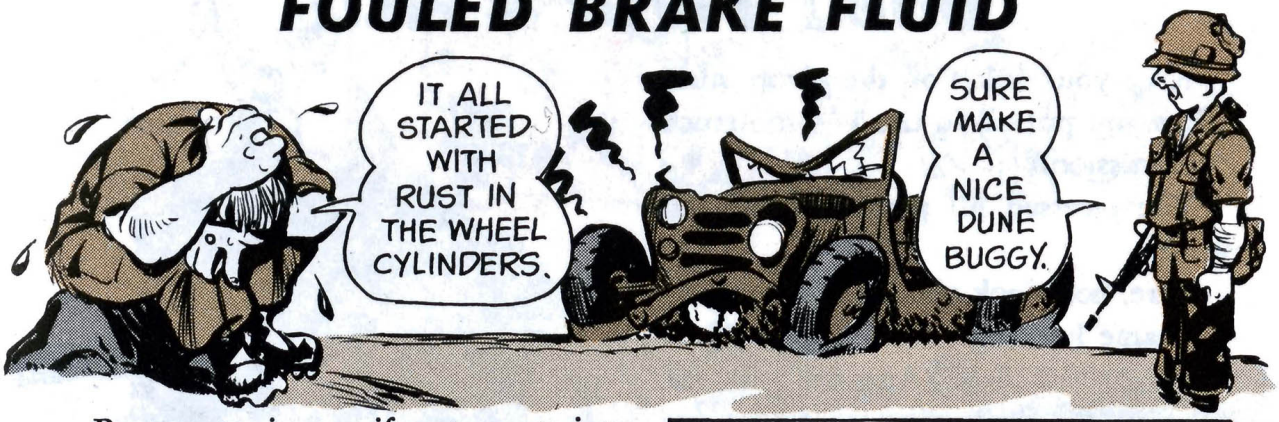
Hold it! Before you take off in that 2 1/2-ton G742-series truck, take a peek at the data plate at the right end of your instrument panel. If yours shows Contract No. DAAE-06-68-C-007, you'd better check those 4 U-bolts holdin' your springs to the front axle. Some of 'em are missin' a nut 'n' washer.

If you need 'em, get Nut, FSN 5310-752-1641, and Washer, FSN 5310-013-1142.

Torque for the U-bolt nut is 190-230 lb-ft.



FOULED BRAKE FLUID



Rust can ruin you if water gets into the brake fluid of your M151 1/4-ton truck.

How could water get in there?

Just point to the master cylinder filler cap, and you'll hit the cause right on the button.

Before you touch the cap, take a good look at it—as it sits under the hood.

If the cap's 2 vent holes are straight up and down, you're building up rust in your wheel cylinders, master cylinder and brake lines.

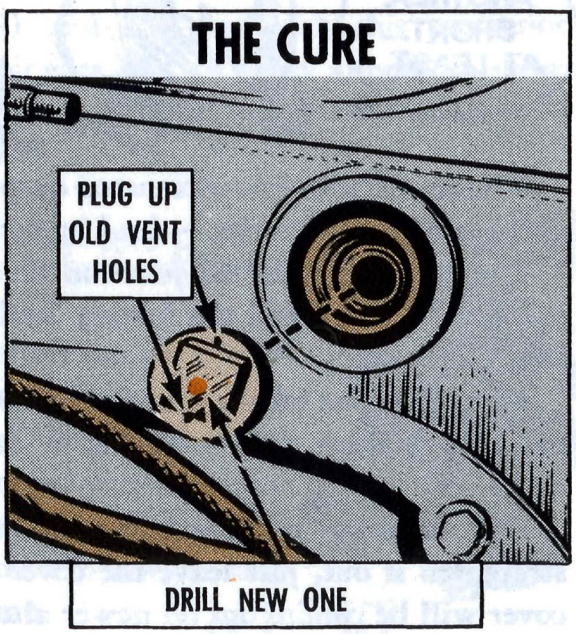
Here's what happens when it rains:

1. Water drips off hood edge onto cap.
2. Cap shoulder forms backwash near top vent hole.
3. Water flows steadily into master cylinder.

Now, it's time to take action. Plug the vents with MIL-S-45180, Type 1 Sealing Compound FSN 8030-247-2525 and drill a new 5/64-in vent hole down through the center of the cap.

That'll do the trick, like it says in the EIR Digest, TB 750-981-3 (Jul 68).

But, be sure you don't goof up the works by tightening the cap too much. This could've been the problem in the first place.

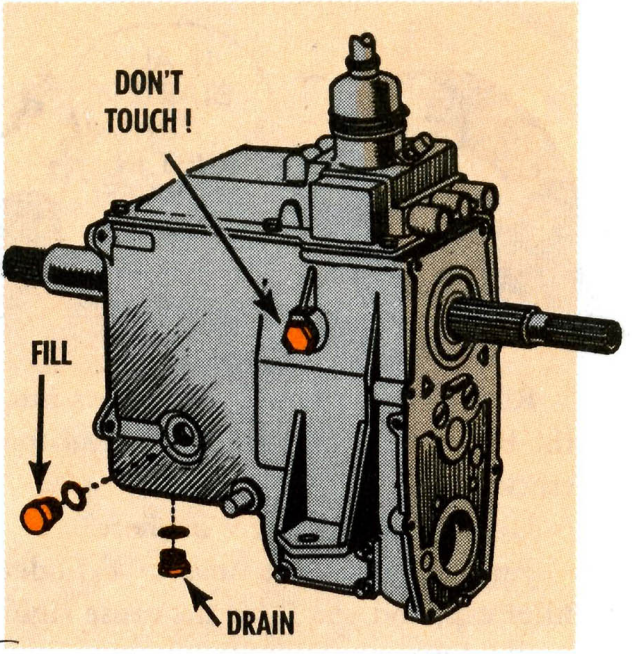


DON'T PIVOT — FILL!

Keep your dukes off the pivot "nut" when you put oil in the 1/4-ton truck transmission.

The recessed fill plug is what you want.

Sure, both look alike, and they're on the same housing. Also, page 2-98 of TM 9-2320-218-20 (Aug 68) calls the fill plug the drain. So, you figure you gotta go higher....



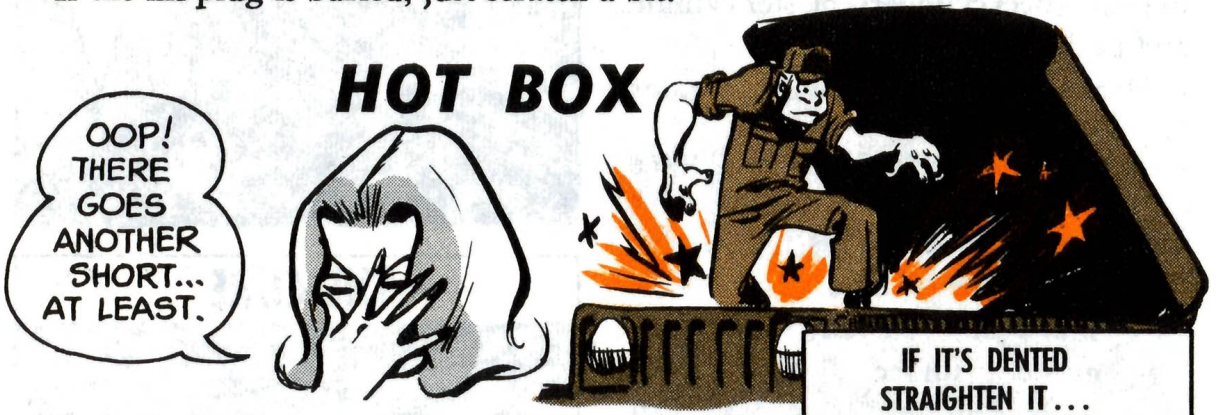
No. No. No. That's a printer's goof. Here's the right poop.

If you loosen the pivot you'll screw up the works — but good. The inside arm assembly drops off its notch and locks the gears.

Remember the difference. The pivot sticks out, and the fill plug is recessed.

If the fill plug is buried, just scratch a bit.

HOT BOX

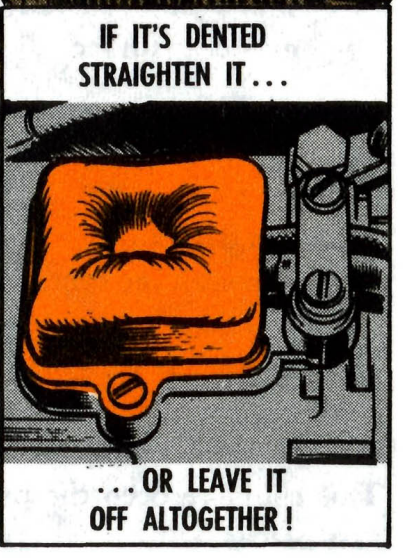


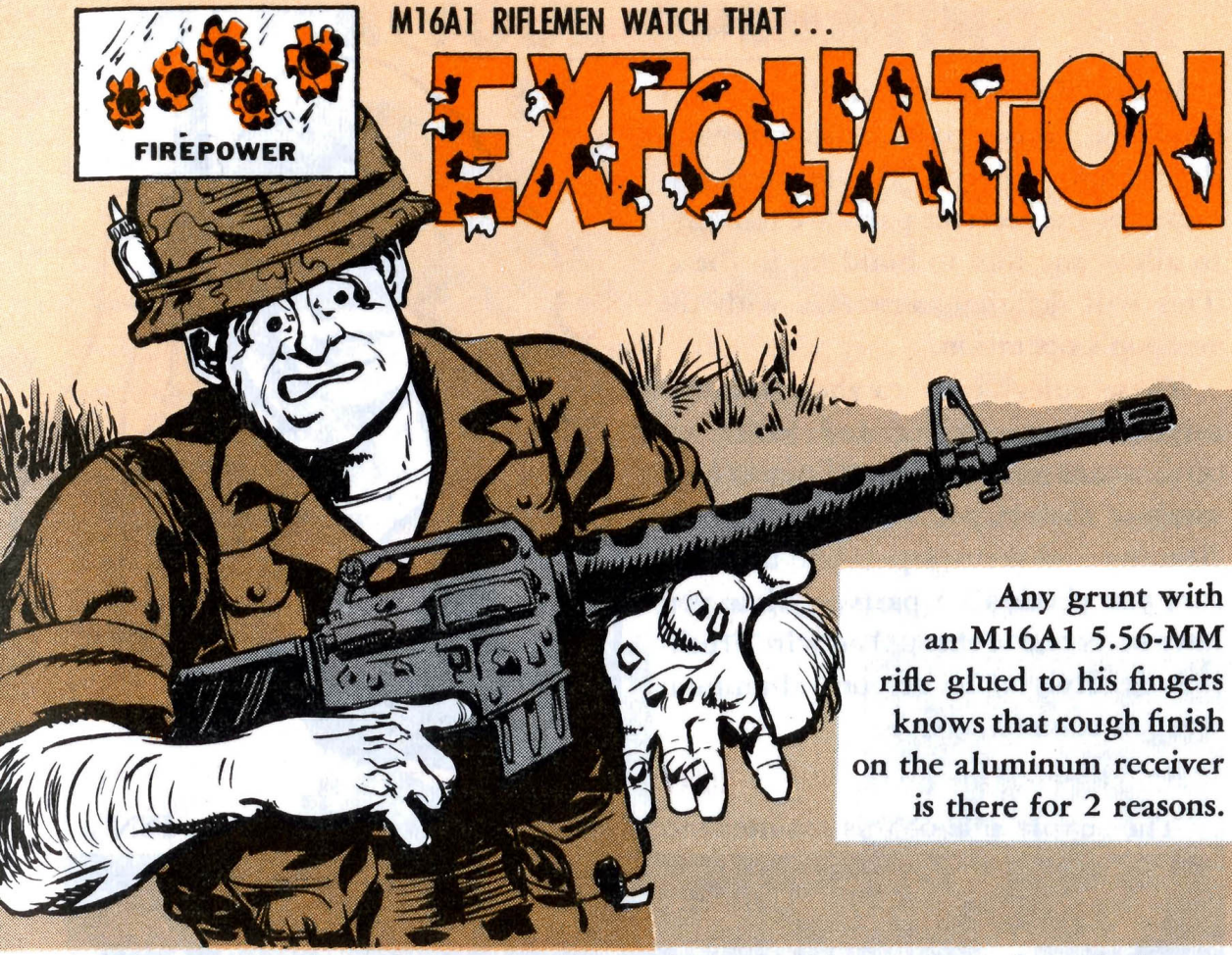
A short circuit — no alternator output — no juice goin' into your batteries — dead batteries — no go.

That's the story if the junction block cover gets mashed down against the battery lead on your 60-amp alternator.

Keep your feet off the junction block cover and be careful you don't drop wrenches 'n' such things on the cover.

If your cover is dented or bent and you can't straighten it out, just leave the cover off. A better cover will be comin' out on newer alternators.





First, it cuts down light reflection during patrolling actions. Second, it protects the metal from exfoliation.

Exfoliation? That's right! It just means bare aluminum starts flaking off once that protective rough stuff's gone. Because that rough finish is actually a hard coat anodized on to the receiver.

If you use your rifle bore cleaner (CR) and LSA regularly, this protection should last for a long, long time. But once it goes, and the shiny aluminum shows through, you need to turn over your weapon to the unit armorer for quick maintenance action on the bare aluminum parts.

ARMORERS CAN REPAIR IT

If you get your rifle to your armorer before exfoliation starts, all he has to do is paint the shiny areas.

If you don't get there in time, your armorer has the proper tools to stop exfoliation (or flaking) action.

That means you armorers can smooth off the corroded area with crocus cloth. Then wash off the bare metal with drycleaning solvent. Recoat the bare aluminum with solid film lubricant and let the parts dry for 12 to 16 hours in a well ventilated area before you reassemble the weapon.

P.S MORE

CAREFUL WITH THAT LUBRICANT

If any of this lubricant film spatters inside the receiver parts, wash it off with drycleaning solvent. The inside tolerances for the receiver parts are too tight to allow any film to build up in there. This will definitely interfere with the weapon's operation.

These rules apply to the upper receiver, lower receiver and lower receiver extension . . . depending on how much of the weapon's aluminum needs cleaning and recoating at one time. Be sure you check all 3 parts anytime you have to fix one of them. And wire brushing is always no-go on aluminum weapon components.

SUPPLY STUFF

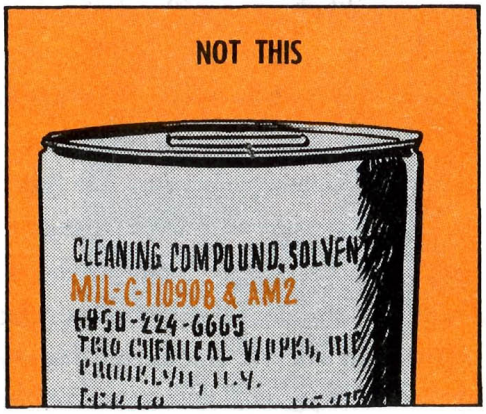
The supply side of this maintenance situation requires knowing a few FSN's:

Rifle Bore Cleaner (CR)	MIL-C-372B 6850-224-6656 (2-oz bottle) 6850-224-6657 (6-oz can) 6850-224-6663 (1-gal can)	Drycleaning Solvent	6850-664-5685 (1-qt can) 6850-281-1985 (1-gal can)
Crocus Cloth	5350-221-0872 (50-sheet sleeve)	Solid Film Lubricant	9150-142-9309 (12-oz aerosol can)

By the way! Don't wet your patch with bore cleaner until you're sure of what you've got.

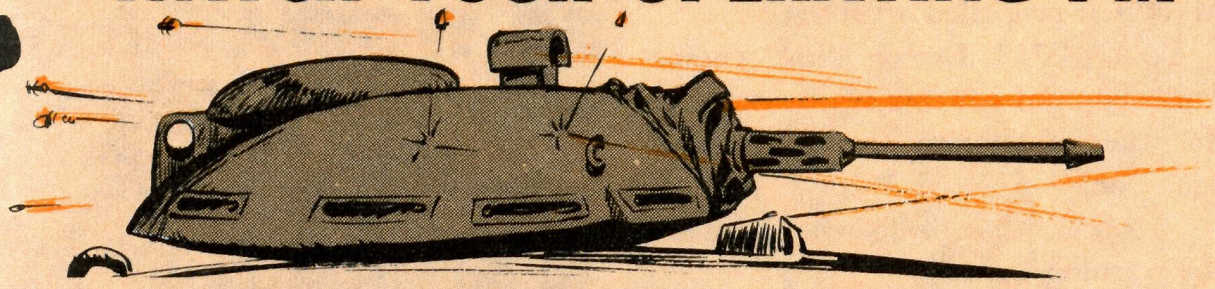
If your cleaner doesn't show MIL-C-372 some place, toss it back.

Could be another breed of cleaning compound which both your fingers and your weapon wouldn't appreciate contacting . . . such as this MIL-C-11090 variety. That's a degreasing solvent which has nothing to do with cleaning bores.



M85 MACHINE GUN LOADING:

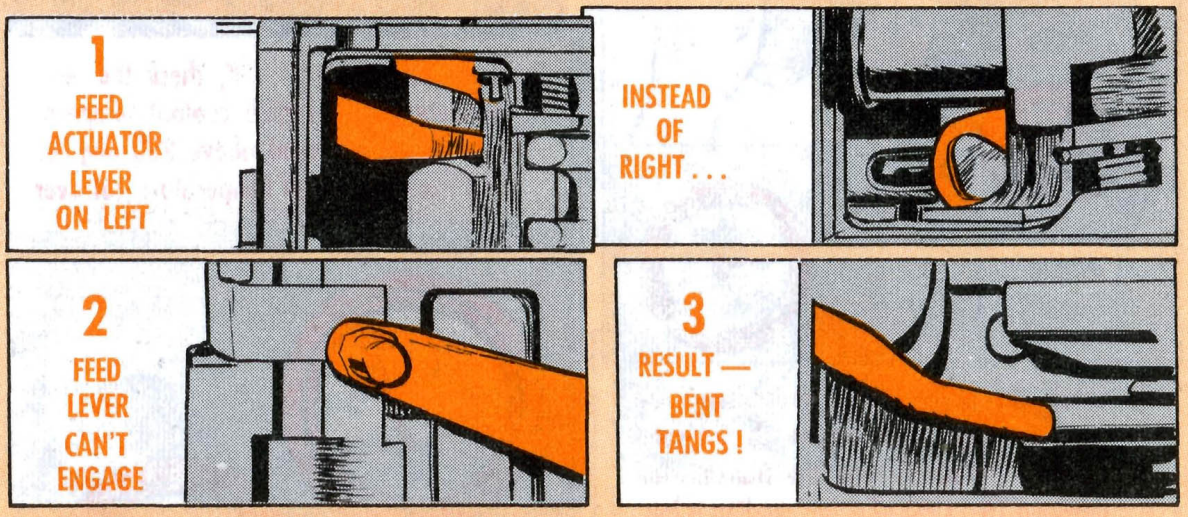
WATCH YOUR OPERATING PM



Rearward to clear . . . forward to load — that's the gist of the bolt story when loading your M85 50-cal machine gun. Never forget it!

Yeah, it happened. A guy lifted the cover, pulled the bolt to the rear, loaded his ammo, put the cover down and started firing. He got off one shot, and that was it.

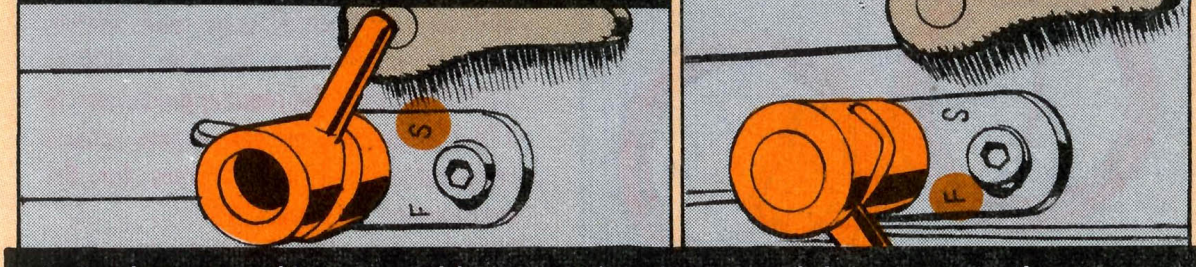
What happened was that pulling the bolt to the rear placed the feed actuator lever on the left side where the feed lever couldn't engage it after he put the cover down. One shot . . . no more feed . . . bent ejector tangs . . . jam . . . HELP!



So, you be smart, huh? Get your TM's procedures down pat and follow the script every time, like so:

1. Lift the cover. If the bolt's already to the rear, clear the chamber of rounds. But if the bolt's forward, first put the safety on FIRE, then pull the bolt all the way back and check for rounds. Never have the safety on SAFE when retracting the bolt.

2. With the safety on FIRE, e-a-s-e the bolt forward slowly. Never let the bolt slam forward.



3. Put the ammo in like your good book says, close the cover and charge your gun. If you're not going to fire right away, put the safety on SAFE.

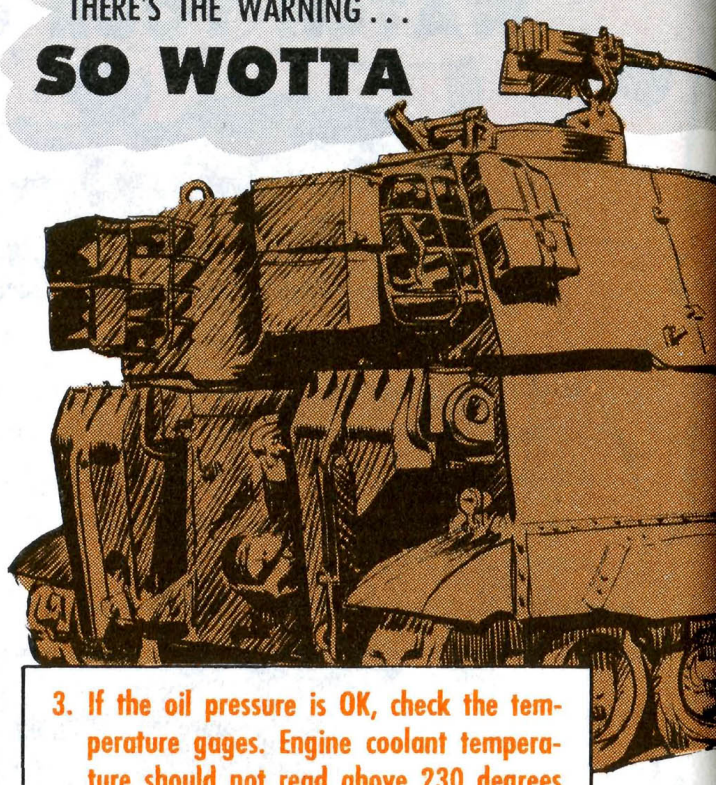
This is for you guys with M108 or M109 self-propelled artillery.

Your 8V71T Detroit diesel engine can burn up if you don't know what to do when the master warning light comes on.

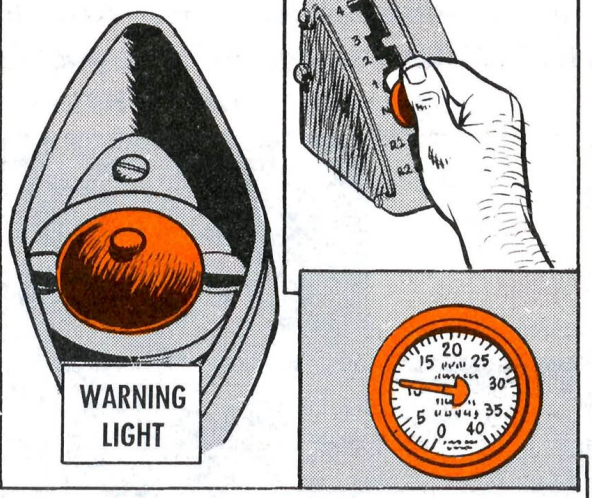
So here's what to do when you get the warning light:

THERE'S THE WARNING . . .

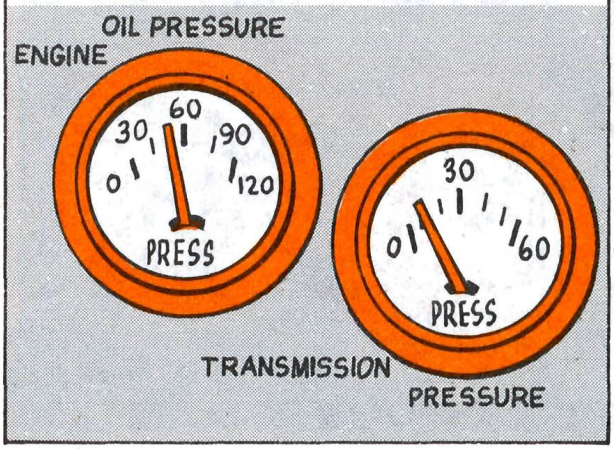
SO WOTTA



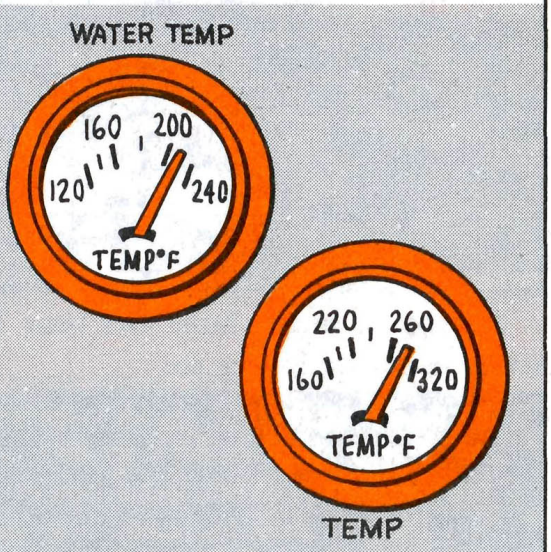
1. Put the shift lever in neutral (N) and set engine speed to fast idle (1000 to 1200 RPM).



2. Check the engine and transmission oil pressure gages. The engine should read between 30-50 PSI and the transmission between 10-13 PSI. If either reading is low, return engine to idle, stop the engine by pulling the fuel shut-off control handle and find out why the pressure is low. Get help from your unit motor pool if you need to.



3. If the oil pressure is OK, check the temperature gages. Engine coolant temperature should not read above 230 degrees and transmission oil temperature not over



300 degrees. If either gage reads higher, run your engine at a fast idle (1000 to 1200 RPM) until the reading goes down to 170-185 degrees for the engine coolant temperature and 220 degrees for the transmission oil temp.

If it takes more than 5 minutes to get the temperatures down, stop the engine and find out why.

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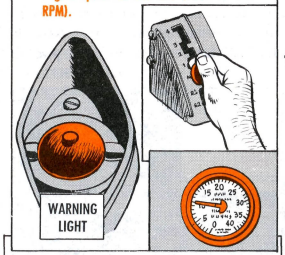

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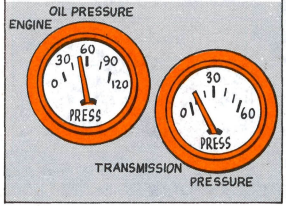

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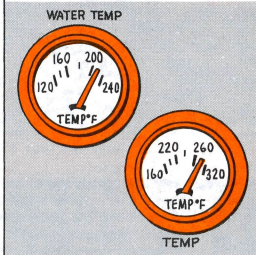

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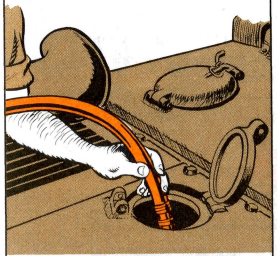
If it takes more than 5 minutes to get the temperatures down, stop the engine and find out why.

When you have to add water to your radiator you never do it with the engine hot. Let 'er cool down to 170 to 185 degrees at least. Follow the instructions in your operator's manual for adding water to the radiator.

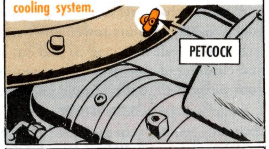
After adding coolant, put the radiator cap back on tight and run the engine at least



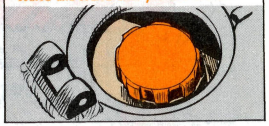
5 minutes at 1000 RPM. Check the coolant level again and add some if necessary.

On late M109's, the cooling system pressure is vented through a pressure relief valve, FSN 2930-475-1506 (P/N 10922327).

With early model M108 or M109 howitzers you have to open the petcocks when adding coolant so you can purge air trapped in the cooling system.



The radiator cap, FSN 2930-979-5592 (P/N 10882098), on the M108 and M109 howitzers, has no vent. Make sure you have the correct seal in place, and that the cap is firmly seated and sealed after you add coolant.



You'll find the correct radiator cap seal in parts manual TM 9-2350-217-25P/1 (Jan 69) on page 327. It is either Item 11 or Item 12 depending on your vehicle serial number.

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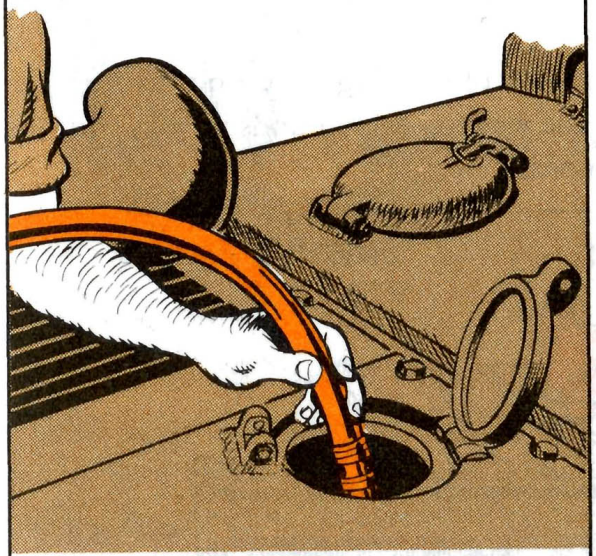

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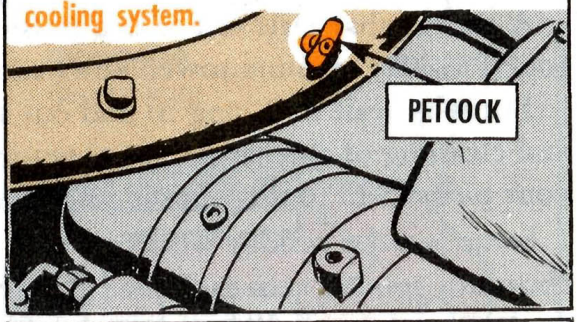

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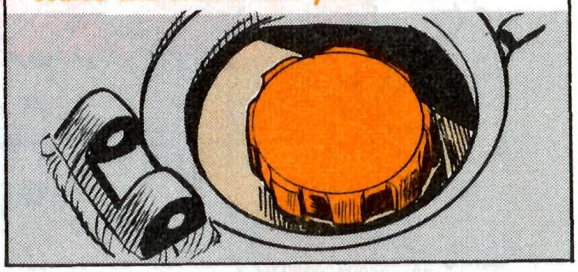

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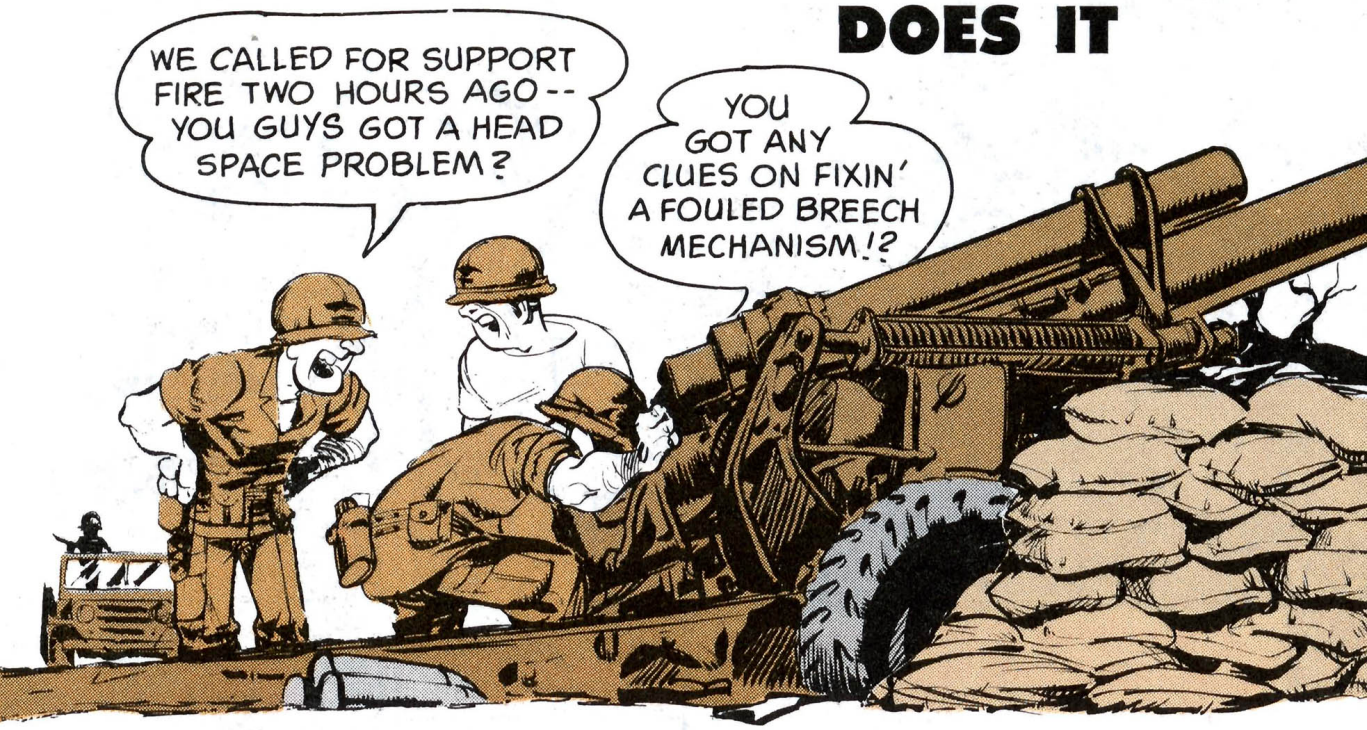
PROPER HEADSPACE AND . . .

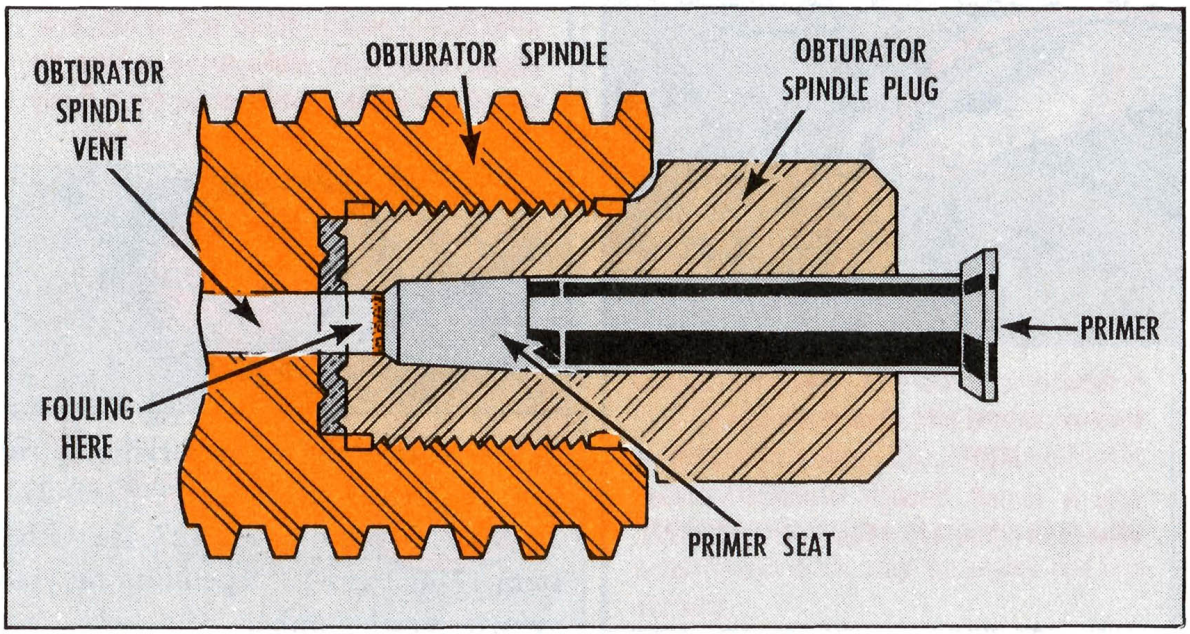
REGULAR REAMING DOES IT



A charge that fails to fire is a possible clue to a fouled breech mechanism on your 155-MM medium towed howitzers.

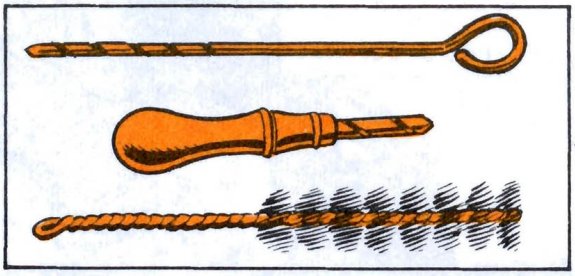
But why wait that long to find out something's wrong when regular reaming and cleaning of the narrow passages in your breech mechanism could have kept your piece from fouling in the first place.

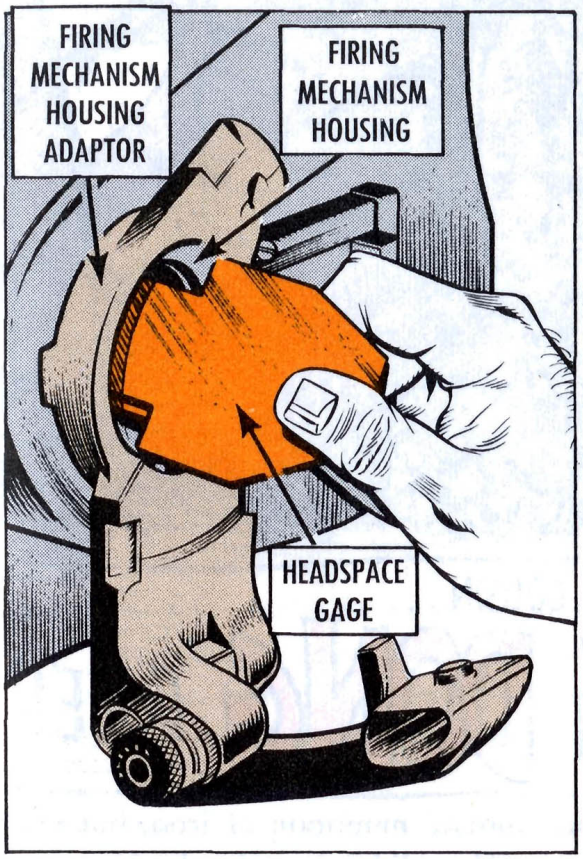
Some powder residue works its way past the obturating parts and through the obturator spindle vent each time you fire the weapon — and finds its way into the small space between the vent and primer seat.

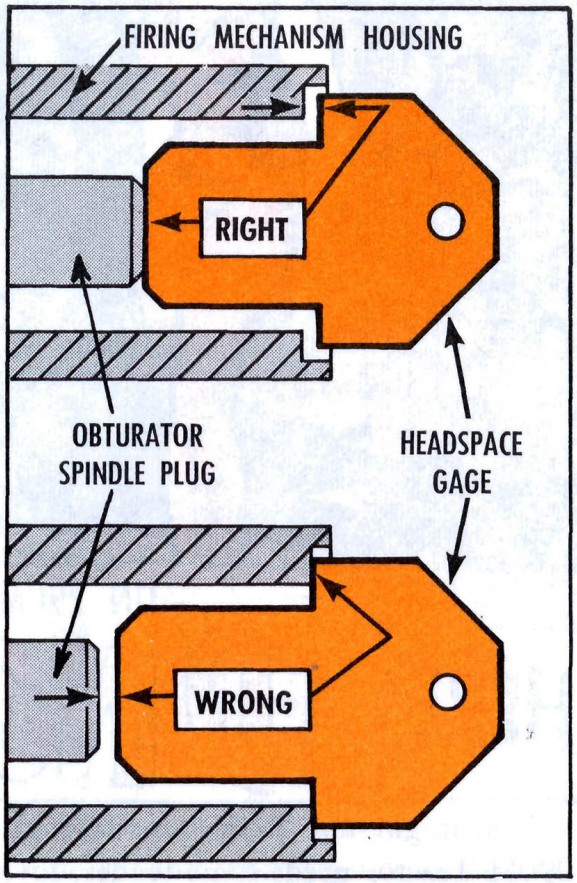


The cure is to use the vent reamers and cleaning tools carried in your howitzer's BIIL (Basic Issue Items List).

However, if fouling of this vent happens too often, you might recheck your headspace according to page 114, TM 9-1025-200-12 (Mar 65). If headspace is wrong—the primer seat will be loose. And too much headspace lets primer blowback help to foul the breech mechanism.



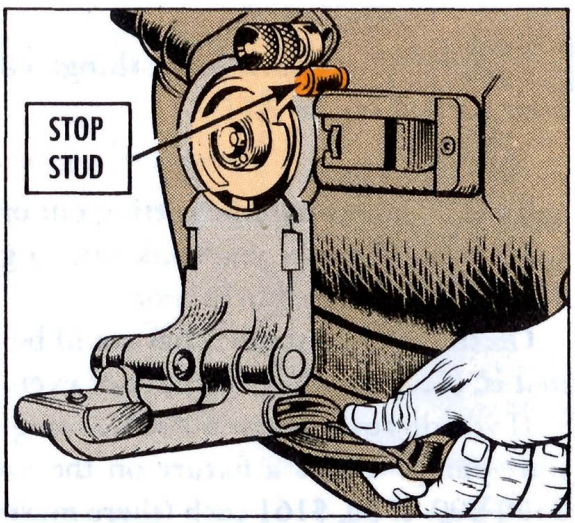


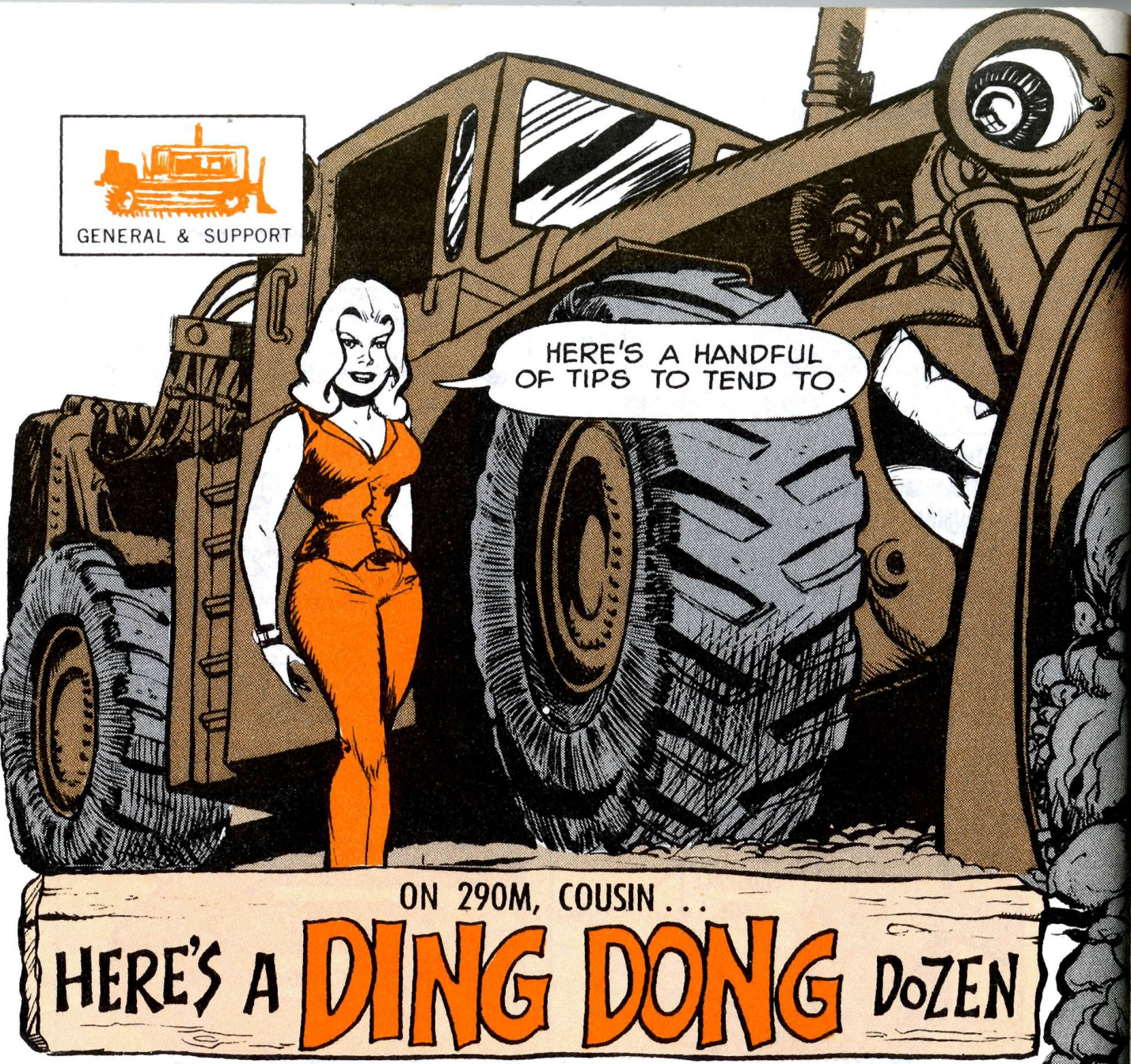


LOCK BEFORE LOADING

Also be sure the M1 firing mechanism is securely locked into the firing mechanism housing before firing the howitzer. This means screwing (clockwise) the firing mechanism into its housing until the handle hits the stop study on the breechblock carrier.

Otherwise, the firing mechanism can back off during firing—or even blow out of the breechblock . . . and maybe take part of your howitzer crew with it.





ON 290M, COUSIN . . .

HERE'S A DING DONG DOZEN

You might not think so to look at that movin' mountain of iron, but your 290M Tractor needs some tender, lovin' care they didn't mention back at good old Fort Hardwood.

Fact, here's a dozen or so things you need to 'tend to that might not have been spelled out in AIT—

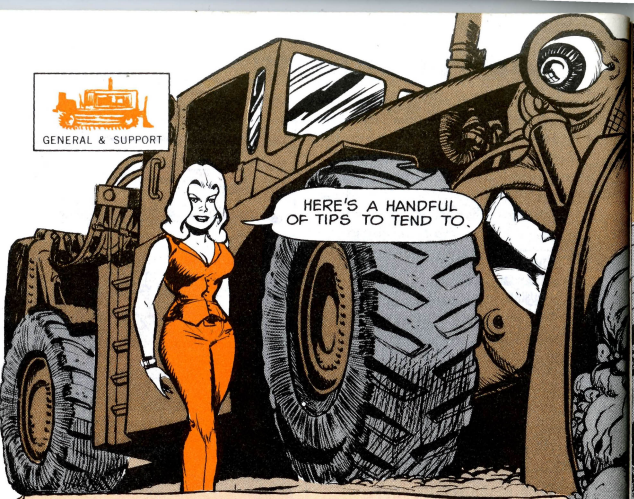
NO REVERSE TOW

Take a little thing like getting out of a jam, f'rinstance.

It's natural when you conk out to get a tow line and let somebody pull you if you can't restart fairly soon.

On this mobile statue, that could be dangerous . . . if you're pulled backward, that is. Never, in no gear, but not **ever**, should you reverse-pull.

If you do reverse-tow a 290M, you quickly and most effectively wreck the push-start pump. That's a fixture on the lower right rear of your transmission, FSN 2520-999-4780, $161 each (there must be a cheaper way to get going!).



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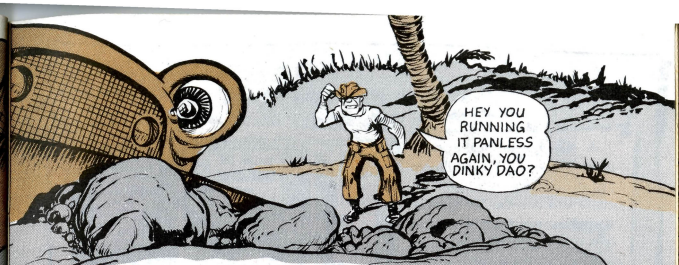
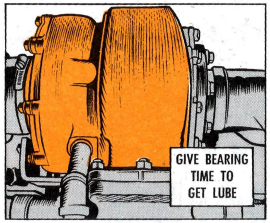


PLEASE! DON'T RUSH IT!

Or let's suppose you're just making a normal start. Your engine coughs a couple of times and starts running slow and easy.

You're feeling real happy and you're eager to go out into the lovely woods of Beautiful Southeast Boondockia . . . so do you sort of hurry the warmup on that eager engine?



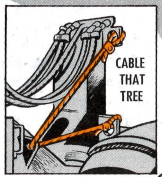
No, you do **not** . . . unless you've got some good reason to want a new rear main bearing and maybe a turbocharger (downtime included, that's over $1 Grand).

The thing is, it takes a little time to get either your turbo bearings or your rear main lubed after your engine begins to run. Low RPM thru the whole 5-minute warmup—not over 900 revs a minute—is safe.

The same idea goes for shutdown. You idle down for 5 minutes.

It takes that long for your turbo to calm down, and it can't get oil unless your crankcase pump is going.

RUNNING PANLESS



Say you're headed over to equipment pool for a new scraper. You've dropped your old bucket off, and you have your universal coupler lock link on. Do you just merrily bang over the hill at good speed for your pickup?

Like you guessed, NO. At least not before you tie that tree in the rear with some stout cable—and tight. That lock link just is not enough; a $900 ball joint is the price of running panless without a tiedown.

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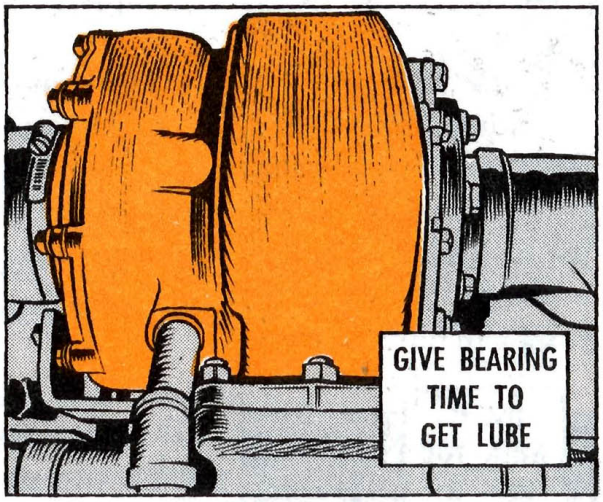

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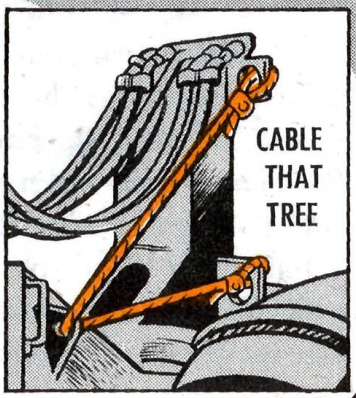

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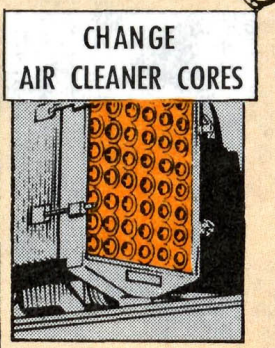
PS MORE

TRY A CHECKLIST

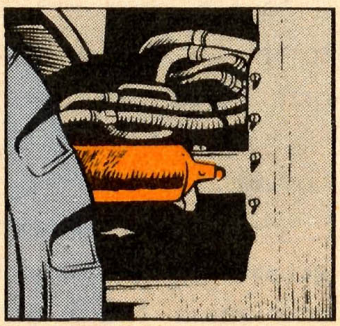
With these samples, maybe the idea is a little clearer. So to make out with the other points, check these:

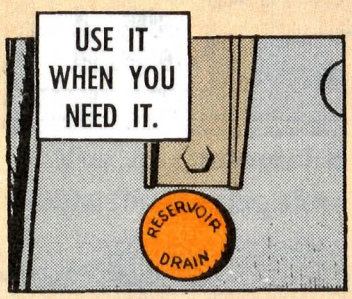
A. Change air cleaner cores as soon as you get a red flag in the restriction indicator, because this is a Go-No Go system. You can help that filter core live longer by cleaning the unloading tip if it ever sticks in wet weather.



B. Don't think your LO is incomplete just because it doesn't mention a grease fitting for your water pump. That pump is factory lubed, and gets greased again only by support maintenance or higher. But if drag develops and loosens your drive belts, do holler for support—it'll save your bearings.

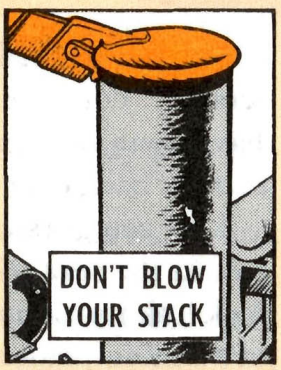
C. Before you move out every morning, check those stiffening rods. If they're not tight and straight, they can bend your route just enough to land you in Chips' Creek—you literally can't steer where you want to. A check on your pan cylinder rod (protective-cover it if you can) won't hurt right at that time either . . . and might keep you from hurting later.



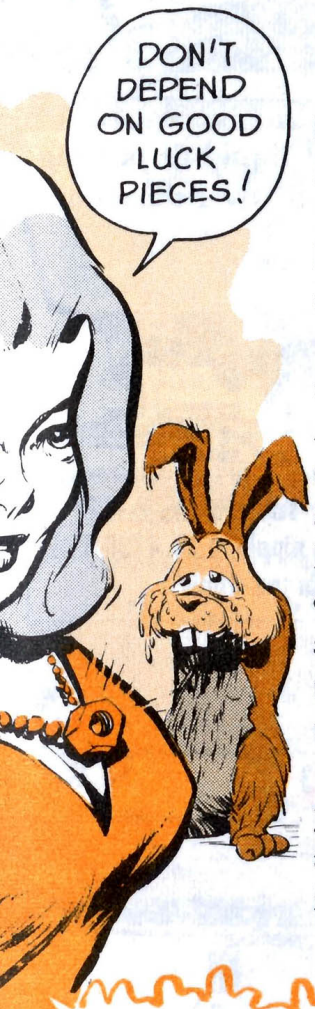


D. Keep sneezer valves healthy so you can get rid of condensate water collected in your air brake reservoirs. Use 'em before every run. A 40° grade—loaded—is no place for aches in the brakes. They're valve, drain, code (06853), P/N 277120, and you can use emergency substitutes if there's no other choice.

E. Make sure your rain cap—your "butterfly" on top of your exhaust—is healthy and working, even if there's not a cloud in sight. If that butterfly gets sick, whichever thing happens is bad—if it sticks shut, the exhaust blows soot back into your air cleaner and ruins it (which ruins your engine in a half hour to maybe 3 hours). If it sticks open, rain gets in your exhaust and most likely blows one turbo, one manifold, one set of cylinder innards, and one stack.



F. Do clean your radiator honeycomb of trash and dirt with compressed air or water hose daily. Even if you don't see dirt, the inside can be clogged. And dirt on the bottom hurts the worst, because that makes your oil temperature stay high—that's the part of your radiator your oil cooler's on. And hot oil can equal engine overheat, burnout, disaster. . . .

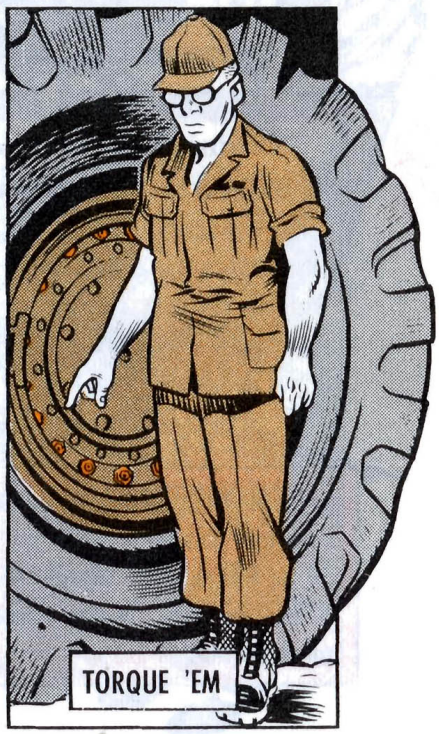


YOUR GOOD-LUCK PIECE

Since there aren't many rabbits in the boondocks, your supply of rabbits' foot luck pieces is probably kind of short.

But there's another charm that's better . . . and don't laugh—it's wheel stud nuts.

What you do is, you spot-check torque to 650 ft lbs about once a week. And every day, you eye-level eyeball all 6 dozen to see if there's any tell-tale signs of shimmy. Long before, several hours before, you ever have any danger of losing a wheel, you'll see little oval-shaped marks around loose nuts where the big ring casting has been crunching up and down.



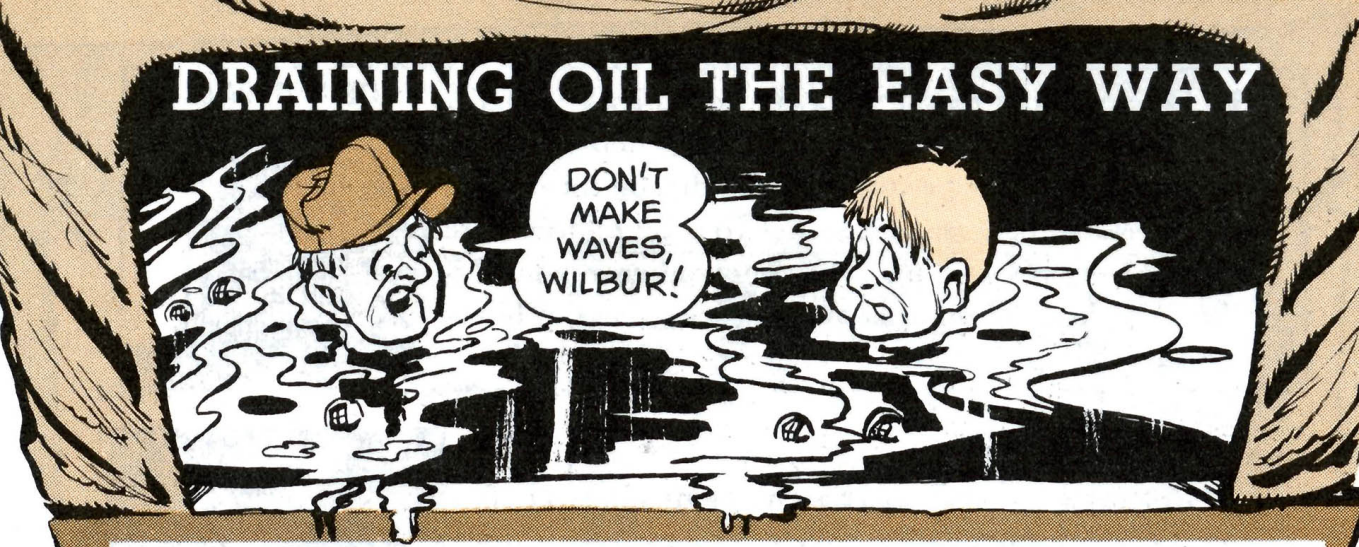
The reason that'll bring you good luck is, it'll help keep you from losing a shoe on a grade, possibly snapping an axle, and rolling over. The future of a 290M herder in a roll-over is likely to be very brief.

So there're the spicy secrets of speedy success. Have at it.

RADIOACTIVE SAMPLE

The MX-1083B/PDR-27, radioactive test sample, is due a leakage test semi-annually, like it says in para 7c, TB 3-6665-201-12 (Dec 66). TM 11-6665-209-15, which says the test is part of the monthly check, is getting changed to jibe with the TB's instructions.

DRAINING OIL THE EASY WAY



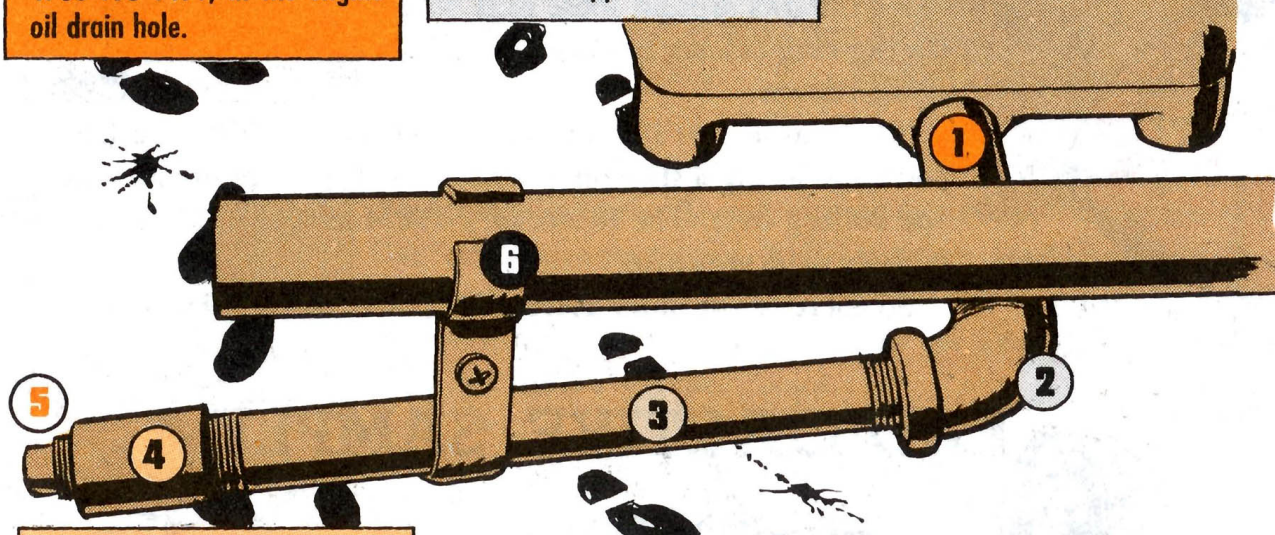
Draining the crankcase oil from the engine of the 50 GPM liquid dispensing tank and pump unit can be a messy business. Sometimes it runs all over the pumping assembly and down into the truck bed.

You can solve that messy problem by the following steps:

1. Remove the oil drain plug (be sure and keep it). Then put a 3/8-in NPT x 3-in nipple, FSN 4730-196-1491, in the engine oil drain hole.

2. Next install a 3/8-in NPT x 90° elbow, FSN 4730-253-4427, on nipple.

3. Now screw a 3/8-in NPT x 7 1/2-in nipple, FSN 4730-188-1875, in the elbow.

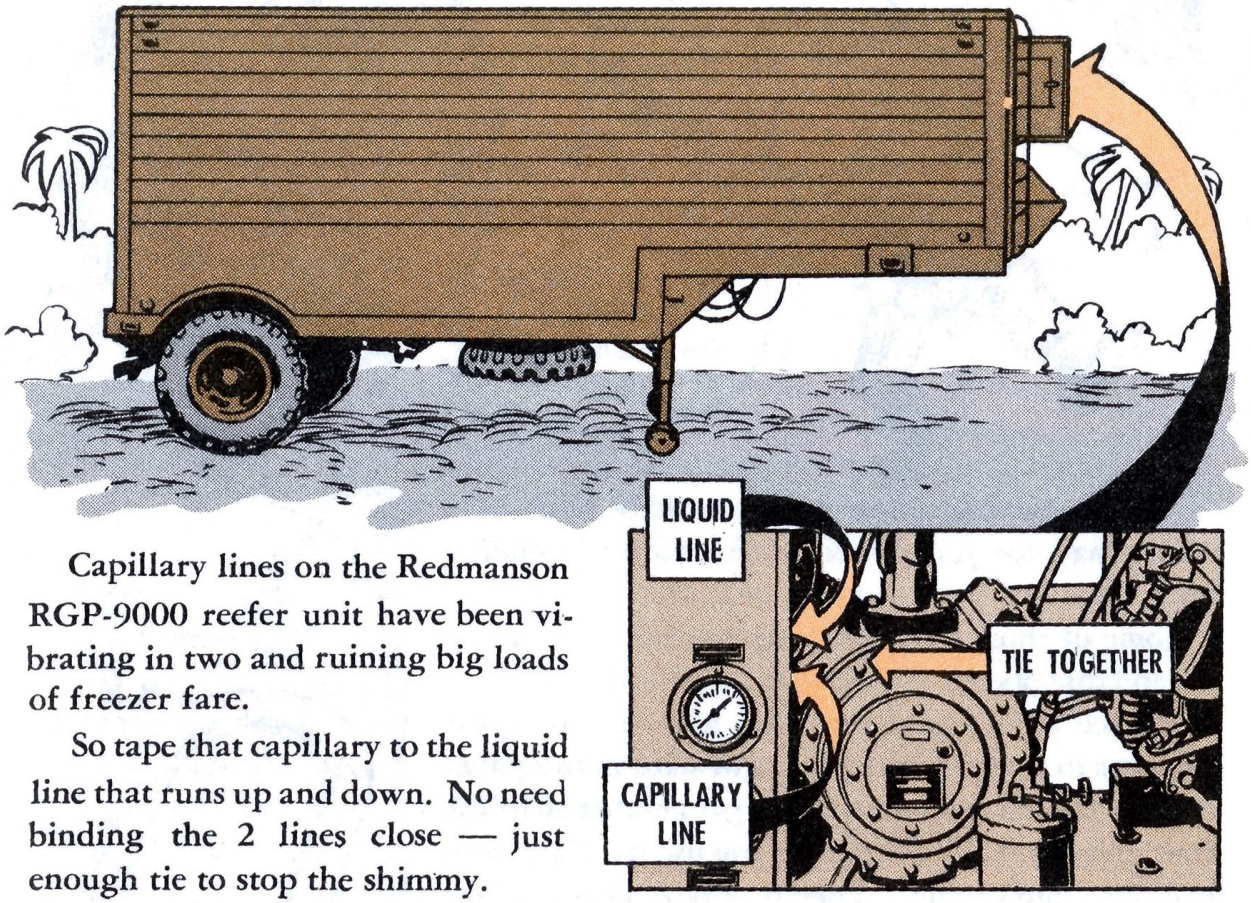


4. Then put a 3/8-in NPT x 1 1/4-in coupling, FSN 4730-187-7611, on the end of the 7 1/2-in nipple.

5. Now install in the pipe coupling the original 3/8-in oil drain plug that you removed from the engine oil drain hole.

6. Fabricate a 2-piece oil drainpipe support clamp from 1/2 in wide x 1/16-in thick steel strap, making each piece 4 in long. Now install the fabricated 2-piece clamp around the oil drainpipe and engine base lifting pipe. Then fasten clamp with a 1/4-in x 3/4-in stove bolt.

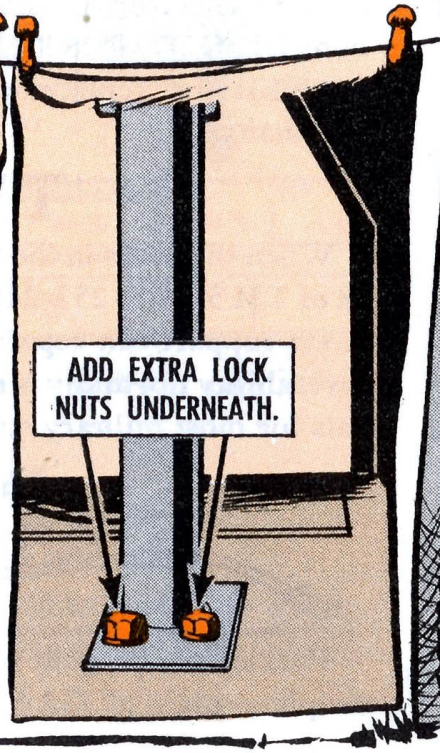
DON'T LOSE YOUR COOL



Capillary lines on the Redmanson RGP-9000 reefer unit have been vibrating in two and ruining big loads of freezer fare.

So tape that capillary to the liquid line that runs up and down. No need binding the 2 lines close — just enough tie to stop the shimmy.

NUT IN TIME

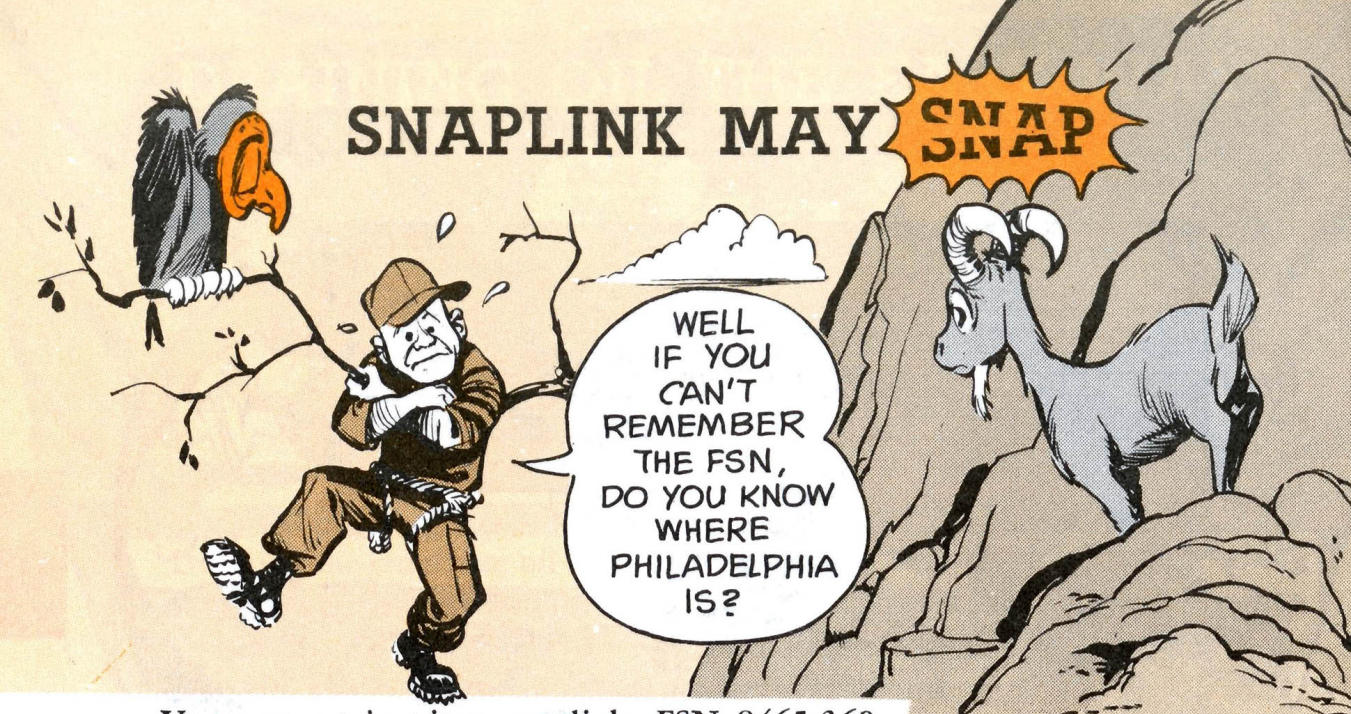


Before you tow your M-532 (Eidal Model ELT-9T) trailer-mounted laundry unit, check one thing. Better add an additional locknut to the washer extractor transportation tie-down mounting bolts to keep those mounting bolts from vibrating loose while towing.

You'll need a 3/4-in, 10 UNC, locknut, FSN 5310-045-1029, for each basic mounting bolt, nut and lock washer.

While you're on the go with your laundry unit, take time to check the mounting hardware to make sure it's tight.

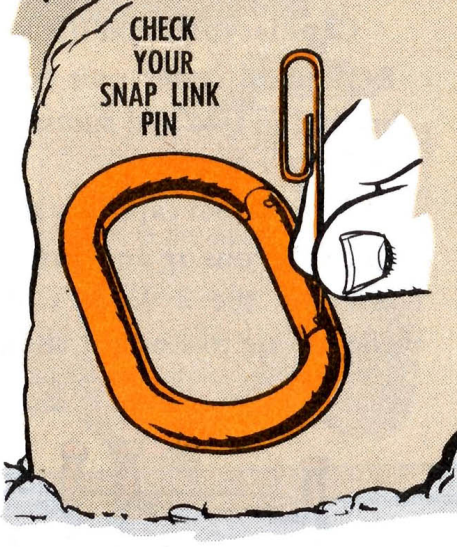
SNAPLINK MAY SNAP



Your mountain piton snaplink, FSN 8465-360-0228, may let you down when you're depending upon it.

Some of those snaplinks may have a loose pin on the end that opens.

To see if you have one with a loose pin, apply pressure to that pin with a piece of wire (like a paper clip). If the pin drops out, better get another snaplink (but give it a check too before you use it). Turn your bad links into supply. They'll report them to the Commander, Defense Personnel Support Center, ATTN: Director, C and T, Div. of Supply Operations DPSC-TSIE 2800 S.20th Street, Philadelphia, PA.19101 for replacement items and disposition instructions.



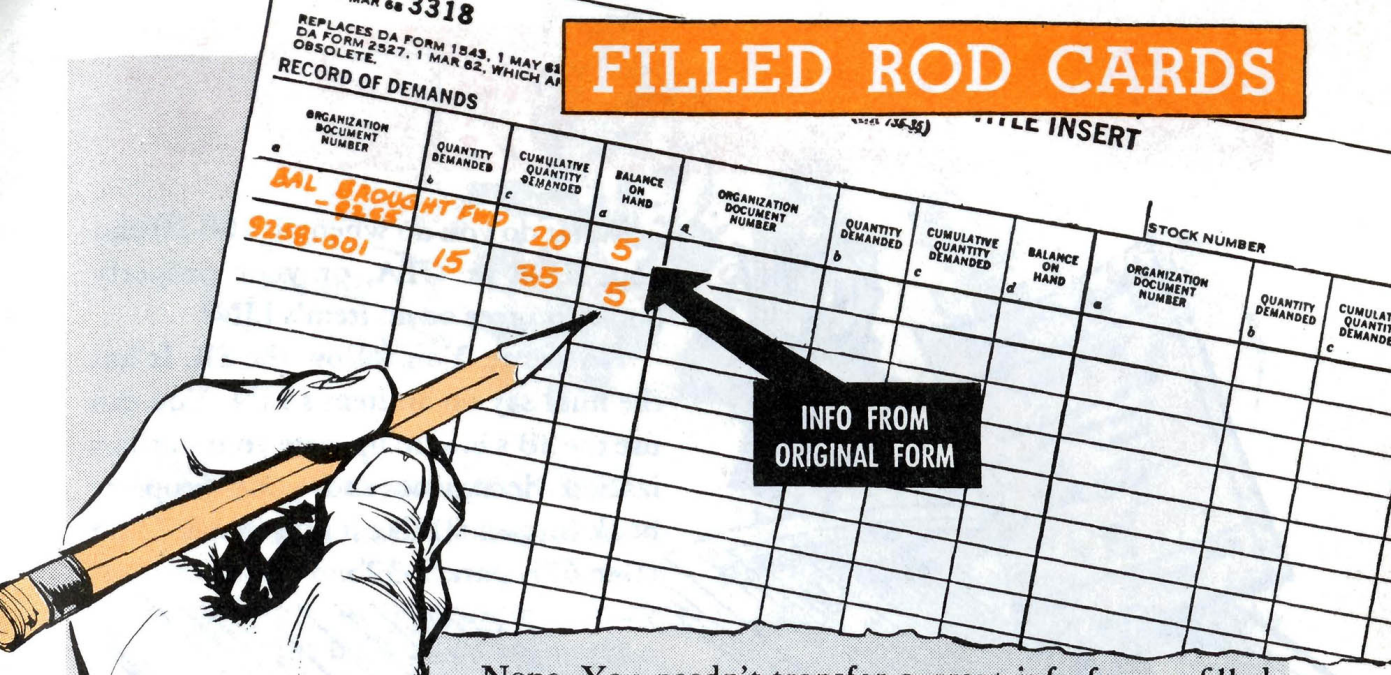
"T" ITEM REPAIRS

When the codes in the SMR column of a parts manual read PFT (like on page 18 of TM 5-2805-257-24P), the F—the **maintenance** part of the codes—means direct support can repair the item. That's so, even when an item coded T on recoverability **normally** is repaired or overhauled at depot, as explained in P manuals for most military standard engines.

D7E TRACK LUBE

Puzzled about what to use in your D7E track adjustment gun? The answer's simple—plain ol' GAA. That's the word from the headshed.

FILLED ROD CARDS

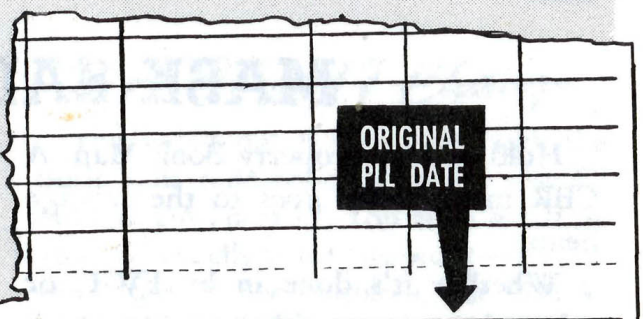


Nope. You needn't transfer current info from a filled DA Form 3318, Record of Demands, card to a new card. You can just note "Bal Brought Fwd" across columns a and b of the new card, date the entry, and attach the new card to the filled card.

Keep the filled card until its info is no longer current for your quarterly reviews, and then toss it out.

ROD card info is current for 12 months (4 review periods) after an item first goes on your PLL. After the first 12 months all you need is demand info for the current 180 days (2 review periods).

You can continue to use the old title insert with a new card — just correct its info as needed. Anytime you have to remake a title insert, of course, you must transfer the date the item first went on your PLL, to the new insert.



REMARKS	STOCKAGE CODE	DATE	QTY
M101A1, 105-MM Towed Howitzer	MS	9013	22
	AUTHORIZED STOCK LEVEL (Use pencil)		
STOCK NUMBER / ITEM DESCRIPTION	3	LOCATION	
6240-155-7864 Lamp, Incandescent		A	1

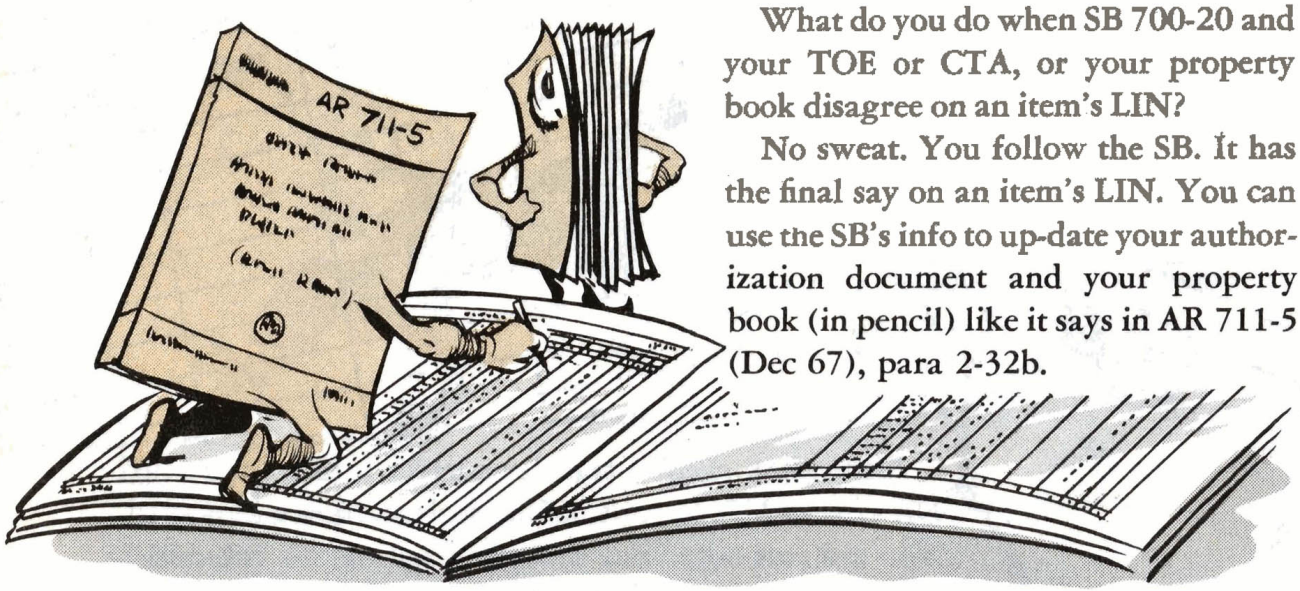
The records cut-off SOP, file number 14-27, para b, page A-22, AR 340-2 (Sep 69), can be used on your record of demands cards.

GENERATOR TM CHANGE

There's a new TM series now for the 400-Hz 10KW Military design generator gang — it's TM 5-6115-450's, not the -332 series as listed on the data plates.

PROPERTY BOOK TYPES...

FOLLOW THE FAT SB



What do you do when SB 700-20 and your TOE or CTA, or your property book disagree on an item's LIN?

No sweat. You follow the SB. It has the final say on an item's LIN. You can use the SB's info to up-date your authorization document and your property book (in pencil) like it says in AR 711-5 (Dec 67), para 2-32b.

To cross-check LIN's in older authorization documents with LIN's in SB 700-20, you use SB 700-22. But, be sure to read para's 1 and 2 in the cross-checking SB, before you use it. And, hang on to it . . . it'll not be reprinted.

If neither SB answers your questions on an item's LIN . . . and, you think the item's reportable, you can report the problem like it says in AR 711-5, para 2-32d.

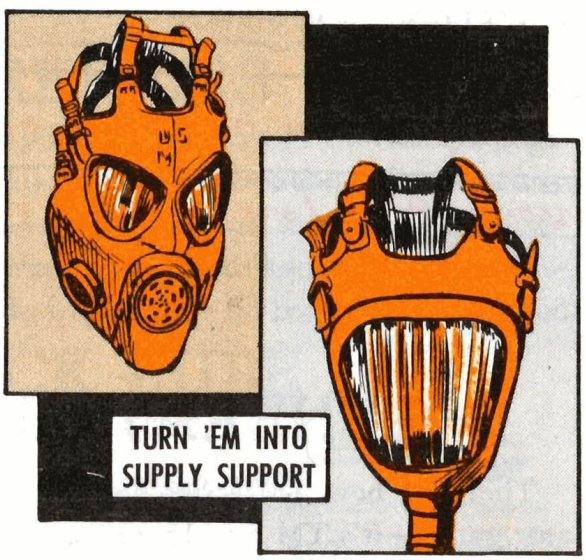
MASK SALVAGE...?

Hold it, Mr. Property-Book Man. A CBR mask never goes to the salvage heap.

Whether it's done in by FWT, or otherwise . . . or, it's excess, a mask must be turned in to your supply support outfit. That goes for the M17-series field protective masks, the M14 and M25-series CV crewmen's masks, the M24 pilot and aircraft crewmen's masks —and, any other CBR mask you may have on your book.

Normally, supply support turns the masks in for repair, or as directed by special instructions from its back-up supply support.

DA Cir 750-28 (Apr 69) has the word on this and other special supply info on the masks.



Connie's Mini Mini's

Clean Ammo Needed

When you lay out your linked ammo belts to check 'em for damaged links or cartridges, try to keep 'em off the ground. Lay the belts on clean boards or tarp while inspecting them. Otherwise you might pick up dirt and crud that could cause stoppages.

Calibration TB

You'll find the latest listing of Calibration Requirements for the Maintenance of Army Materiel in TB 750-236 (Oct 69).

CMMI Tip

All you CMMI watchers may want to latch onto a copy of Ch 3 (15 Dec 69) to AR 750-8. It has new word on scoring of faults found by CMMI teams under rules of the AR and DA Pam 750-10.

Thermostat Check

Please pass the word—When it comes to testing the thermostat in your equipment's liquid-cooled cooling system, follow the scoop in Fig 78 and page 96, TM 9-2858. In other words, you're not to let the stat touch the hot water container. So, kindly X-out the bucket shown on page 15, PS 199.

Scratch "2-Oz"

Scratch that 2-oz can of PL-S lube oil that snuck onto page 25 of PS 205. FSN 9150-185-0629 is no longer in the system.

New Model Scoop

If your Huey C model has been upgraded to an M model with a T-53L-13 engine, run your fingers thru the white pages of TM 55-1520-220-20. Ch 3 (29 Sep 69) has all the poop on the new engine.

DA Form 17 Change

You won't get the changes with the basic pub automatically when you fill out that DA Form 17. You have to list on your 17 exactly what you want—or you won't get it. For example, list "TM 9-2320-238-20"(when you need only the basic); "TM 9-2320-238-20 and changes" (if you want the basic and all changes); "TM 9-2320-238-20, C3" (when you need only the last change). If you need C2 and C3, you list "TM 9-2320-238-20, C2 and C3". Remember, if you want the basic publication, be sure to put that word "and" between the publication number and the changes you need.

Would You Stake Your Life right now on the Condition of Your Equipment?

TURN IT OFF...
AVOID BURNED-OUT PARTS ON YOUR VEHICLE-MOUNTED RADIOS!
...BEFORE YOU START OR STOP YOUR ENGINE